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Changes in Personal, Social, and Intellectual Behavior of Children Originally Classified as Feebleminded

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PREFATORY STATEMENT

IN VIEW of intense and critical advance interest in the following study which has arisen in consequence of a preliminary publication of a summary (cf. *School and Society*, 1945, *62*, 409-412) it seems appropriate to call the attention of readers to a somewhat unusual situation in respect to scientific policy in publication. Where a piece of research produces results which appear to be in sharp contrast to conventional professional opinion, and especially if there is an element of controversy, a scientist might be expected to withhold publication pending a repetition of the research, preferably under independent auspices. In the present case, however, although several such repetitions of this investigation are, we understand, at the point of being initiated, the unusual scope of the experiment, involving some eight years for the collection of the data plus several more for preliminary planning and the subsequent analyses, would entail a delay of many years if publication were to be held up. Because of the desirability of making available the full report of the study* for those who may wish to repeat various aspects of it for verification or extension, the undersigned believe it desirable to publish it at this time.

Signed,

Bernardine G. Schmidt (author)
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Robert H. Seashore (member of examining committee)
John F. Dashiell (editor)

* The scope of the doctoral thesis in the School of Education, Northwestern University, upon which this publication is largely based, was limited to the educational, social, and vocational development of the subjects, but did not at that time include the data on development in intelligence test scores which were a part of the total directed study and are included in the present publication.

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CHANGES IN PERSONAL, SOCIAL, AND INTELLECTUAL BEHAVIOR OF CHILDREN ORIGINALLY CLASSIFIED AS FEEBLEMINDED

CHAPTER I

THE NEEDS OF THE FEEBLEMINDED FOR DEMOCRATIC LIVING

INTRODUCTION

IF EDUCATION is to serve the goal of efficient democratic living, it must emphasize intellectual growth, emotional maturity, moral integrity, and vocational and economic competency. It must promote the growth of social awareness, civic competence, critical thinking, and social usefulness. Finally, it must guide individuals into group situations, the demands of which they will be able and eager to meet, and thereby enjoy the resulting satisfactions of social interaction.

Social competency has long been recognized as a significant objective of education in a democracy. In 1916, Dewey (20: 130-145) stated the aims of education as natural development, social efficiency, and personal, cultural enrichment. Kilpatrick (36: 78-86) summarized them as: (1) the appropriate adjustment of our behavior to each other; (2) the development of economic efficiency; and (3) the assumptions of common responsibility, based on common dependence. More specifically, at an earlier date (29: 65-78), he set forth the 5 demands of education as: (1) the application of the scientific method; (2) "critical-mindedness;" (3) interest in and co-operation with the social whole; (4) respect for the worth of individual personality; and (5) social-mindedness. Such aims emphasize the goals of the educative process in the area of social behavior.

Since a democratic society depends for its success upon the co-ordinated activity of all its members, one of the primary immediate goals of education must be the maximal development of the potentialities of each individual so that he not only can adapt himself to his environment, but can control and change that environment as well.

The Educational Policies Commission of the National Education Association has pointed out certain basic needs of all youth, if they are to make the best personal and social use of their abilities. Among these needs are: (1) education for civic responsibility and competence; (2) understanding of family relationships; (3) understanding of the main elements of the American culture; (4) instruction in healthful living; (5) occupational guidance and training, and orientation to current economic conditions; (6) development of rational thinking; (7) insight into ethical values. (33: 16-17)

Doane's study of the needs of youth according to selections by those youth found that students in secondary schools felt their major educational needs to be: (1) adequate vocational guidance; (2) opportunity for expanding personal and group contacts; (3) understanding of social and political problems. (21: 119-121)

True democracy draws no lines of discrimination between nationalities, religions, or races; nor between economic, social, or intellectual levels; and, consequently, group interaction must depend for its effective success upon the mentally feeble as well as the mentally gifted. The improvement of the personal

and social behavior of those individuals who fall markedly below the normal must be accomplished if the social efficiency of the group of which they are a functional part is to be raised. The needs of feebleminded children are the same as the needs of all children; and, therefore, the aims of education of the feebleminded are the same as the aims of general education. (22: 4-5)

Baker (14: 261-2) estimates that approximately 2% of the total population fall within an IQ classification of 50 to 75, while another half per cent fall even below this minimum. In 1940, more than 98,000 children of school age were enrolled in special schools or classes for the mentally defective, at a cost of slightly less than $11,500,000, annually. Almost 22,000 were in private and public residential homes and institutions for the feebleminded, at a total cost of over $27,500,000 per year, making a grand total cost of slightly less than $39,000,000, annually, of which more than $37,000,000, or 94%, were paid from public funds. (31: 97-110; 153-161)

In addition to these specific costs for the care and instruction of those classified as mentally defective, there can be included also an indeterminate share in the maintenance of other schools and institutions not primarily responsible for the mentally retarded, but which nevertheless include in their program of care such deviates whose mental handicap is but one contributing factor to still other problems of adjustment.

These costs are justifiable if available evaluations of educational programs for which they are incurred can show the attainment of personal and social competency by these mental deviates. Risden finds that the subnormal in his post-school activities shows restlessness, lack of leadership, inability to read (or learn to read), and inability to choose wholesome recreation. (8)

Abel and Kinder, reporting the behavior of girls whose IQ's were between 50 and 89, state that these girls created tensions within the home, were sexually promiscuous, became attendance and behavior problems in school, ruined goods in employment, and increased labor turn-over. (11: 158) They were poorly adjusted in behavior at work, and undependable in occupational responsibilities. They were found to be highly suggestible, to enjoy cheap shows and burlesques, and to read only tabloids and dime novels. Their behavior was most promiscuous, and they were usually socially diseased and illegitimately pregnant. They did not have sufficient intelligence to rear children, and they needed the care of countless social agencies, becoming in time complete public burdens. "Those whose IQ's were below 50 were so low in intelligence as to be unable to achieve social adjustment except under very limited custodial condition." (11: 8)

Glickman's study investigated the present status, vocational adjustment, family and social life, of 81 dull and retarded children, ranging in IQ's from 46 to 93, from one special class in an urban community. (55) He reported less than 20% were ever employed, and of this group the median wage was $7.23 per week. Their leisure time activities were limited to gambling and the movies. More than half of the girls were unmarried mothers, each of whom had given birth to at least two non-wedlock children, of whom more than half had died in their first year. More than a third of the boys had records of delinquency on charges ranging from stealing a bike to

one each of statutory rape and murder, while more than another third were reported to have stolen produce and merchandise, but had never been arrested or prosecuted.

Baller found greater percentages of illness and higher mortality rate in adults who had been classified while in school as mentally deficient than in the average adults who comprised his control. He also reported an absence of educational achievement beyond the "opportunity room," higher police-court records, occupational instability, and a higher rate of economic dependence. (1)

A small group of studies have been concerned with constancy or fluctuation of the IQ in mentally retarded children. Kephart found that high-grade morons and borderline defectives sustained a mean loss as high as 3 points per year, under unfavorable environmental conditions in institutions. (35: 223-230) Likewise, Crissey concluded, from his study of a large number in relation to length of institutional residence, that loss in IQ increased in relation to the duration of such residence. (19) The study of a group of mentally deficient boys, made by Phillips, (39) also noted that in IQ retests a small number of cases showed increase; a large number showed decrease; and a still larger number showed no change.

But not all reports of post-school activities of the feebleminded have shown negative adjustment. In 1923, Anderson and Fearing studied a group of 298 who had been out of school from one to six years. (13: 31) Of this group, approximately half were employed in industry, and about half of this group held their jobs a year or longer. Only a little more than a fifth had court or institutional delinquency records, although almost three-fourths had required community help in meeting social problems, as shown by their registrations with social agencies.

Some years later, in 1932, a study of the employment of special class pupils was reported by the Children's Bureau of the United States Department of Labor. (18: 29-30) This investigation included approximately 1,000 pupils who had left special classes in Rochester, Detroit, Newark, Oakland, San Francisco, and Los Angeles. The boys of this group were found to be employed in unskilled and semi-skilled work, and in occupations in transportation; the girls were in personal and domestic service. In general, their work was rated as satisfactory by their employers. Fourteen percent of the group held court records, or had served in penal institutions; approximately half the girls had married before they were 20 years of age.

The previous year (1931) Witty and Beaman conducted a study of practices in 588 special classes, which included 11,950 pupils. (10) They found that, in general, the curriculum and methods of the "special class" resembled closely those of the regular graded classes, differing from them only in expected rate of learning. Only a scattered few varied from the traditional subject-matter or instructional techniques. Shortly thereafter, Beaman reported a follow-up study of two groups of behavior problem boys, ranging in intelligence in the moron and borderline classification. (54) She found the boys to be fairly stable occupationally, holding an average of about three jobs in the three-year period since they had been in school. Only one of the 25 boys included in the follow-up study had never been employed.

Another favorable report, of vocation-

al competency at least, is found in the report of the activities of a group of children at Locust Point, as made by Fairbank 17 years after leaving the community. (5) While the general adjustment of these individuals showed excessive conflicts with the courts and other social agencies, their economic adjustment itself was good, and three-fourths of the group were found to be self-supporting.

Likewise, Kephart (35: 228) found gains of from 2 to 22 IQ points in a small group of 15 to 18 year old retarded boys, following a specialized institutional program which had been in operation 1½ years at the time of his report. The average IQ at the beginning of the program was 66.3; at the end of the study it was 76.4; 50% showed an increase of 10 points or more, and 25% gained 14 or more points. While the number of cases on which these data are available is small,[1] the findings point to possible important gains in the mental growth of the mentally handicapped, if these findings can be corroborated by further investigations.

Stoddard points out that most follow-up studies in feeblemindedness have reported what has happened without benefit of significant cultural changes in the environmental situations. (42: 288) Reports of such introduction of change in program, and record of subsequent change in behavior, are few. With the exception of the studies by Beaman, Fairbank, and Kephart, such investigations as have been here summarized have been accounts of post-school adjustment attained without significant change in the educational programs attempted for these children. In general, they offer little encouragement for the rehabilitation of the mentally defective for social competence and effective living. On the contrary, they have presented evidence of an alarming failure of present educational programs to achieve even their minimal objective of satisfactory, socially-acceptable personal behavior; much less vocational competence and social usefulness. Such reports have shown an imperative need for careful and intensive experiment in and evaluation of educational programs for the feebleminded child, if the objectives of personal and social competencies are to be attained for *all* members of a democratic society.

[1] Only 16 children were included in Kephart's study, all boys.

PLAN OF THE PRESENT STUDY

The experiment here being reported was undertaken in order to investigate the nature and degree of observable change in behavior, in children originally and competently classified as feebleminded, during and after participation in a school environment planned to decrease nervous tensions, to remove emotional blockings, to further social interaction, and to develop self-confidence and a sense of personal worth. Some of the specific problem phases upon which data were desired were the following: (1) will children so classified show change in personal, social, and intellectual behavior after participation in an educational program so planned? (2) what will be the nature of such change as may be found to occur? (3) insofar as measurable, what will be the extent of such change? (4) if change is found to occur in school years, will it be maintained in later, post-school years? (5) will change continue in the post-school period? and (6) how will personal, social, and intellectual growth in children

who have participated in such a school environment differ from that of feebleminded children who have participated in a different school environment?

In order to examine these problems an educational program was planned on the basis of a careful analysis of the psycho-biological and predicated needs of 254 feebleminded children, ranging in ages from 12 to 14 years, and in IQ's from 27 to 69. Careful observations were made of educational, vocational, and civic activities and periodic clinical examinations were recorded, as the basic data for the evaluation of the educational program. The eight year evaluation period, was divided into two parts: the in-school period, a three-year interval while the children were participating in the experimental program; and the post-school period, ranging to a five-year interval following their withdrawal from the special program.

Chapter II

The Experimental Design

The educational experiment here being reported was devised within the framework of the division of special schools and classes of the public school system of the city of Chicago. This system had begun special provision for exceptional children in 1899 when it established a bureau for the study of individual differences in children and the adaptation of instruction to meet their varied needs. (25: 273) The following year, 1900, the first class for mentally retarded children was opened, the pupils being selected then and since on the basis of psycho-physical examination by the special bureau.[2]

THE GENERAL FRAMEWORK

Selection and special placement. Principals of the elementary schools requested examination by the special bureau for those children who had been referred to them by their classroom teachers because of some problem condition. (25: 253) This condition may have asserted itself either as a behavior or as an academic problem. Those children so referred who were found to have an intelligence quotient below 70, on the basis of the individual psychological examination, were assigned to a special class or special center;[3] those below twelve years to a primary or intermediate class, while those over twelve were assigned to an adolescent class. (27: 289)

Special class administration and supervision. Special classes were housed in regular elementary school buildings, where they came under the administration and supervision of the principal in all matters pertaining to the whole building. (25: 253) In matters relating specifically to instruction and special class problems, supervision was directly through the Assistant Superintendent in Charge of Special Schools and Classes. (26: 382)

Curriculum. As these special classes developed, their emphasis was on pure handwork, to the exclusion of other learning, until the latter years of the 20's. This period was followed by an attempt to require classes for the mentally handicapped to adhere rigidly to the regular elementary school curriculum.

Evaluation and revision. In 1934, when the city system was the subject of an intensive survey,[4] the program of the classes for the mentally handicapped was most severely criticized (25: 253) on the basis of its instructional facilities, personnel, and curricula.

One way in which improvement was subsequently sought was by the provision of a small budget appropriation for the purchase of books and test materials for academic instruction. Previous provision had been for handwork supplies only. Also, special classes for children twelve years of age or over were grouped and organized into "centers," each made up of from 2 to 5 classes. These centers were still housed in elementary buildings, but the consolidation promoted a greater cohesiveness among

[2] Before the development of individual psychological examination, psycho-physical methods were the basis of appraisal.

[3] For purposes of this study feeblemindedness was taken to be indicated by an IQ of 69 or less, obtained from a clinically administered intelligence test.

[4] Directed by George D. Strayer, Columbia University.

pupils within the center, and permitted the development of activities and interests of the center as a social and educational unit. Each adolescent center was equipped with a simple shop where the boys could learn woodwork or simple electric wiring, and girls could learn cooking and sewing. (26: 292-93) The provision of a shop and several classrooms, approaching as it did the departmental organization of the upper elementary and high school, made possible interaction with several teachers and groups of pupils.

Still another method by which improvement was sought was the training of special teachers and improvement of their supervision in service. Lack of an adequate number of skillful teachers had made impossible the establishment of additional classes or centers to care for the 21,000 mentally defective children for whom no special educational provision had been made prior to 1934. (26: 379) A new training program was inaugurated, providing for the selection of superior teachers already duly certified for the regular elementary grades (kindergarten through eighth grades) for intensified special training and supervised practice in the education of the mentally handicapped. (25: 254) Selected classes were designated as demonstration centers, where elementary principals and special class teachers met to observe in practice methods and techniques which had been found to be effective in stimulating pupil growth. In addition, better supervision was made possible by selecting outstanding special class teachers to work with other teachers to develop their abilities and resourcefulness. (26: 382)

Because of the obvious heterogeneity of these special classes, curricula and methods were extremely flexible. It was both the professional privilege and the responsibility of the individual teacher, in the case of a class, or of the directing teacher, in the case of a center, to determine the needs and learning capacities in her teaching situation. Teachers were given the freedom necessary to discharge such a responsibility, and were also given supervisory and administrative encouragement to experiment. It was in such a professional environment that this experimental study was begun.

THE EXPERIMENTAL PLAN

The major objectives of the experiment to be reported here were two-fold: (1) the development for feebleminded adolescents of an educational program which would relieve emotional tensions, provide for social interaction, and develop self-confidence and a feeling of personal worth; and, (2) the evaluation of that program in the light of personal, social, and intellectual behavior, and change in that behavior, during an in-school period while participating in that program, and a post-school period after they had left the special placement. This behavior, and change in behavior, were measured by performance on standardized tests and in experiential activities, and were evaluated on the basis of paired individual, and equated group, controls.

SELECTION OF CASES AND EQUATING OF CONTROLS

The children in this study were 322 boys and girls between the ages of 12 and 14 years,[5] in 5 special centers for the feebleminded in a large city of the Middle West. They had been placed in these special centers on the recommendation of the Child Study Bureau of the city schools, following the administration of

[5] The mean age for the group was 12-5.

individual intelligence tests by the psychologists of the Bureau.

While no artificial selection of cases was made by the subject centers, certain factors effected a natural selection of children received from the placement bureau for special placement. These variables included:

(1) Classroom teachers' judgment in referring children for examination.

The initiative for the origin of all requests to the placement bureau for children's examinations lay with the classroom teacher. To the extent that factors other than mental retardation weighted these requests, the cases subsequently referred to the bureau for special placement were unrepresentative. Therefore, in addition to the constant selective factor of feeblemindedness, the sample included other personality factors, varying and unknowable as to kind and degree.

(2) Chronological age

Only children 12 years of age or over were recommended for placement in the adolescent centers.[6]

(3) Intelligence

The criteria employed by the placement bureau for the determination of feeblemindedness was the performance on the Stanford Revision of the Binet-Simon Tests, yielding an IQ of 69 or less. For Groups I, II, and IV, the 1916 revision was used. For Group III Form L was used. To the extent that results of this test may have been severely lowered by handicaps of vision, speech, or hearing, or by temporary physical or emotional aberrations, the children referred for special placement may have included some whose "feeblemindedness" was apparent rather than real; but in spite of such possible inaccurate diagnosis, they were "classified as feebleminded" by the bureau in its act of referring them for special center placement.[7]

(4) Sex

Certain centers were planned for boys only; others for girls only; and a few for both boys and girls. Centers A and C were coeducational; B, D, and E were for girls only. Because of this administrative restriction on admissions, the total number of pupils in this study were distributed in this manner:

	Boys	*Girls*	*Total*
Center A (experimental)	70	40	110
Center B (experimental)		91	91
Center C (experimental)	32	21	53
Center D (non-experimental)		31	31
Center E (non-experimental)		37	37
Totals	102	220	322

Thus, the group of 322 children in this study can be described as being representative of the adolescent children *classified* as feebleminded, but not necessarily representative of all feebleminded adolescents, since there remains always the possibility that variables of physical handicap or emotional aberration may produce a state of pseudo-feeblemindedness, not recognized by an examining psychologist. Because of the 2 to 1 ratio of girls to boys in the study, it is also possible that the group was not truly representative, to the extent to which sex differences may have been found to operate.

The 322 children included in the study were distributed among the 5 centers in the following manner:

Center A	Group I	110
Center B	Group II	91
Center C	Group III	53
Center D	Group IV	31
Center E	Group IV	37

[6] Those below this age level, found to be in need of special placement, were referred to primary or intermediate ungraded rooms.

[7] This theoretical possibility holds only a slight chance of probability, however, since a competent psychologist is aware of such influencing factors, reduces or removes any intrinsic in the testing situation, and considers all factors affecting test performance before making the diagnosis. (Cf. Terman, Lewis M., *Measurement of Intelligence*. 1916. Houghton, Mifflin and Co., New York. Pp. 109-110.) That the personnel of the placement bureau were highly competent psychologists will be seen from the statement of their training and experience, set forth later in this chapter.

Table 1 presents the intelligence quotients, grade placements, and socio-economic status for each of the centers included in the study.

From this table it can be seen that the children of all 5 centers were very similar in intelligence level and in socio-economic status; however, more children who were transferred to Center A came from the intermediate and upper elementary grades than did those in the other centers. Taken as a group, these children ranged through the imbecile and moron levels of intelligence; they came from grade levels in the regular elementary schools from 1st grade through 8th; they came from homes ranging from the lowest to the very highest socio-economic levels.

This study includes all children who were enrolled in 5 special centers during the time of the experimental program. In this report the children from these centers are classified as follows: Group I, all those enrolled in Center A from November, 1935, to June, 1938; Group II, all those enrolled in Center B from October, 1936, to June, 1939; Group III, all those enrolled in Center C from September, 1939, to June, 1942; and Group IV, all those enrolled in Centers D and E, from 1936 to 1939.

The chronological ages were within a two-year range, from 12 to 14 years, with the following means: Experimental Centers A, B, and C, 12-5; Control Centers D and E, 12-7.

For the evaluation of the study, 3 controls were used: (1) a group control of all pupils in Centers D and E, compared with an equated group selected from experimental Centers A and B—this group of necessity included no boys because Centers D and E were for girls only; (2) paired identical twins in experimental and non-experimental centers; and (3) paired identical twins in experimental centers and in regular classes.

TABLE 1

Range, medians, means, and sigmas of intelligence quotients, grade placements, and socio-economic ratings for each contributing center

Center		IQ				Grade Placement			Socio-Economic Rating			
	N	Range	Mdn.	M	Sigma	Range	Mdn.	M	Range	Mdn.	M	Sigma
A	110	27–69	50.64	49.58	10.4	0–8.0	6.0	5.7	1.3–16.2	5.38	6.35	3.5
B	91	35–69	55.46	53.47	8.6	0–7.5	2.5	3.0	1.3–15.3	4.10	4.59	2.2
C	53	27–69	55.20	55.6	10.2	1.0–7.5	4.0	4.1	1.3–13.2	4.41	4.37	2.3
D	31	55–69	63.20	61.3	2.3	2.5–5.5	4.5	4.0	1.3–14.1	4.62	4.53	3.3
E	37	50–69	62.10	62.5	2.1	4.1–6.2	5.6	5.3	1.3–15.5	4.30	5.21	2.1

The group control required the equating of 5 variables: (1) chronological age; (2) initial IQ; (3) number of years previous school attendance; (4) family socio-economic status; and (5) initial academic achievement. These variables are equated in the two groups in Table 2.

In the first of the individual controls, 4 sets of identical female twins were paired between the experimental and non-experimental centers. In the 2nd individual control, 4 sets of female, and 3 of male, twins were paired between experimental centers and the regular classes.

The study continued over a period of 8 years, during the first 3 years of which the children participated in either the experimental or non-experimental schools. The last 5 years was a follow-up

period of activities, after they left the special centers. The length of the in-center period was so selected because it was the period for which school attendance was compulsory after special placement. The follow-up period was planned to permit time to elapse for vocational and social problems to develop after leaving the special centers.

TABLE 2

Means and critical ratios of equated variables in group control

Group	N	C.A.	I.Q.	No. Yrs. Schooling	Socio-Economic	Comp. Achievement
Experimental group	64	12–3	55.3	6.3	4.9	1.8
Non-experimental group	68	12–7	60.0	6.7	5.1	1.9
CR		1.09	.4	1.1	.1	.003

LOCALE OF STUDY

Five special centers were selected as subject centers for this study. A, B, and C were experimental centers, chosen because their contributory districts included all ranges of socio-economic status represented in the entire city, and could be considered as a cross-section of the metropolitan area. Centers D and E were chosen as non-experimental centers because they presented a group of pupils capable of being equated with the experimental group, on each of the 5 selected variables described earlier.

Four of the five subject centers were located within an area of 3 square miles in the heart of the near north-west side, a section predominantly industrial, where most of the homes were former factory buildings or shops, which no longer met safety and sanitation requirements. The 5th center was located on the far north side, where the area was in a stage of change from residential to industrial. Their comparative status in area, housing, population, and rate of delinquency is shown in Table 3.

The total district contributing pupils to the experimental Centers A, B, and C, covered an area of 122 square miles and included 53 of the 67 residential community areas in the city. The pupils in Centers D and E represented a district of 60 square miles, all but 10 of which were contained in the experimental contributory district. The geographical location of the separate centers, and the

TABLE 3

Population, housing, and delinquency status in immediate locale of subject centers

Area No.	Centers	Population[8]	Families / Dwellings[9]	Economic Rating (37)	Delinquency Rating (40:68)
4	D	46,419	2.6	H	VL
24	A, B, E	187,551	2.4	VL	M
27	C	60,125	2.1	M	L

[8] From data of Fifteenth U. S. Census, 1930.
[9] Computed from data in Fifteenth U. S. Census, 1930.

configuration of the respective contributing city area are shown in Figures 1-5. The overlapping of these areas is illustrated in Figure 6. The socio-economic data for the district contributing to each of these subject centers will be furnished in Chapter III.

It can be seen from the foregoing figures that the five subject centers represented overlapping and contiguous areas. This was due to the fact that no rigid district boundaries existed for these special centers, and children were referred for placement to these centers

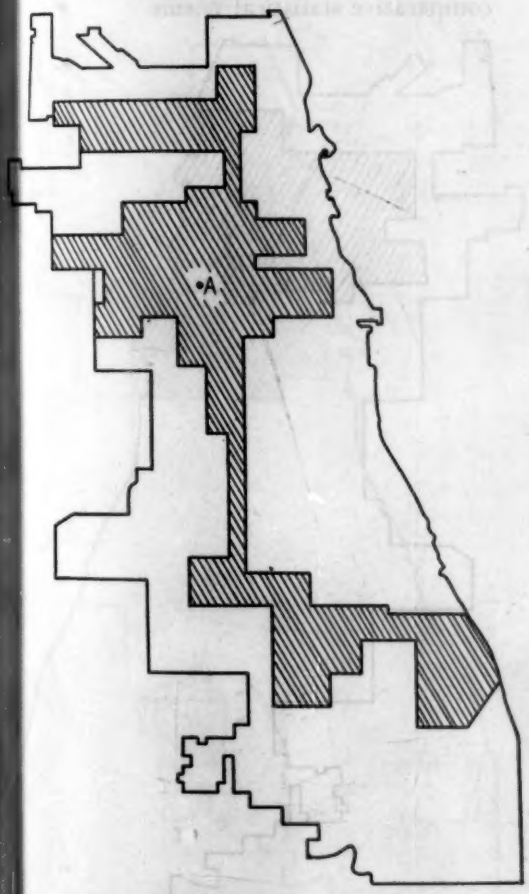


FIG. 1. Location of center "A" and contributory city area. 5/8" = 1 mi. Shaded Area = area contributory to center "A".

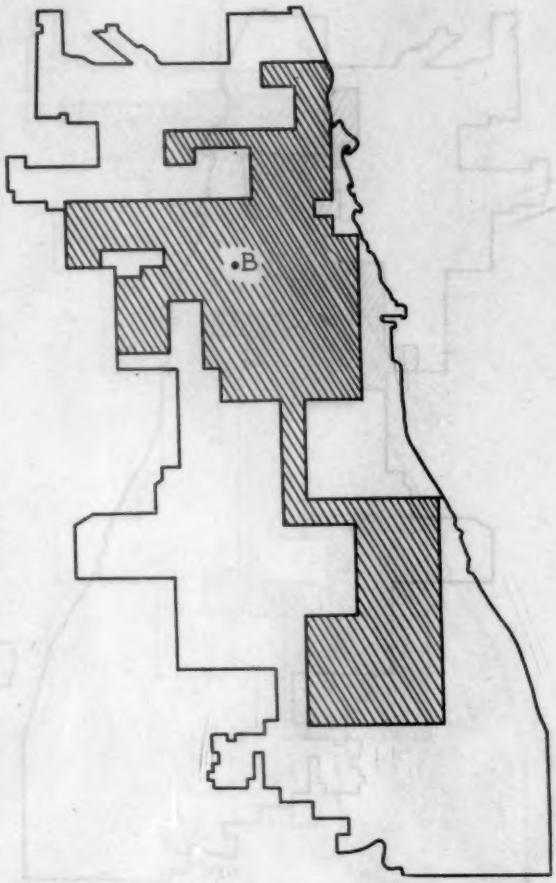


FIG. 2. Location of center "B" and contributory city area. 5/8" = 1 mi. Shaded area = area contributory to center "B".

from any section of the city. Because Center A was the first such center, organized in 1935, it served a city-wide area; i.e., all boys and girls in the city were referred to it, until a second such center was opened. Center B, organized one year later, in 1936, was housed in the same building as Center A, but was planned for girls only; consequently, the contributory area for Center B was likewise extensive, but represented only girl admissions. Center C, organized in 1939, was co-educational; however, because there were then other centers serving the

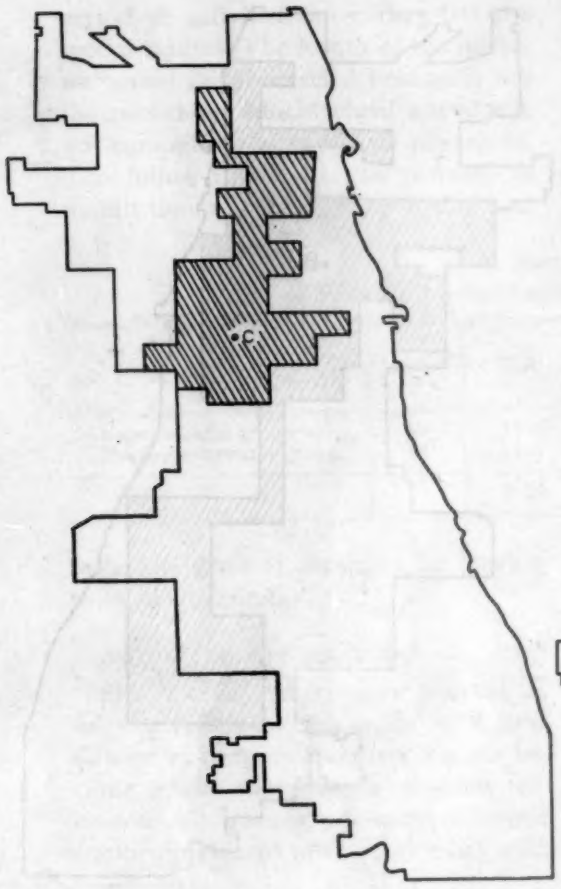


FIG. 3. Location of center "C" and contributory city area. 5/8" = 1 mi. Shaded area = area contributory to center "C".

more distant sections of the city, the contributory area for Center C was relatively closely centered around the location of the center itself. Centers D and E were organized within a few months after Center A, but because they were for girls only, their contributory areas were also relatively restricted.

KINDS AND SOURCES OF DATA

In planning the educational program and evaluating its results, both objective and subjective data were used. Objective data consisted of standardized tests, school and employment records, and records of contacts with social service agencies. Subjective data consisted of interviews with parents, teachers, employers, social service case-workers, and with the children themselves; and correspondence with parents and with the children.

Selection of standardized tests and scales. In selecting the standardized tests, the following criteria were used: (1) scientifically established validity and reliability; (2) little or no practice effect in repeated testings; and (3) availability of comparative statistical norms.

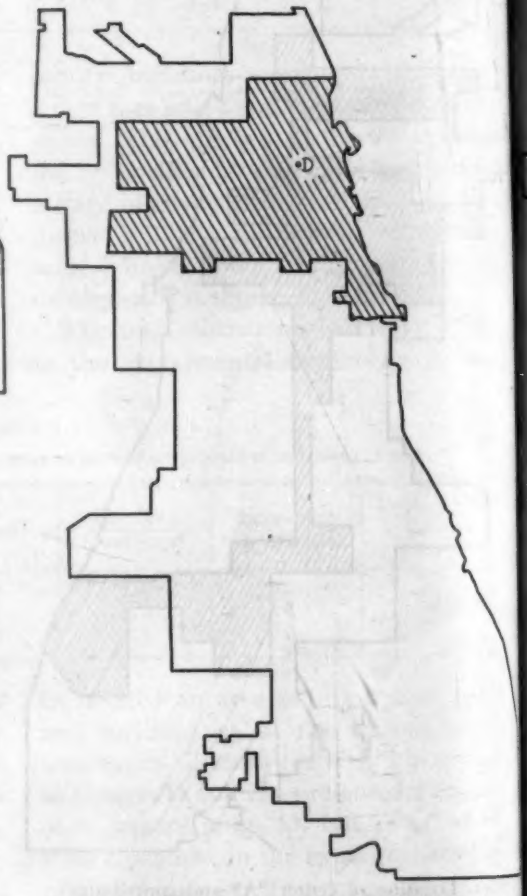


FIG. 4. Location of center "D" and contributory city area. 5/8" = 1 mi. Shaded area = area contributory to center "D".

In addition to these general criteria, it was necessary to scrutinize the assumptions of academic skills, particularly of reading, spelling, and writing, which were basic to tests designed for self-recording of responses by pupils. For satisfactory use in this study, such skills had to be of low primary level, or standardization conditions had to be flexible enough to permit such deviations as the reading of questions to pupils, and the writing of answers on dictation. In the measurement of personal behavior, ratings of personal traits and indices of attitude toward people and social situations, as well as personal self-evaluation, were needed. In the area of social behavior, objective information was sought concerning the degree and nature of participation in social situations, within the home, the school or place of employment, and the community.

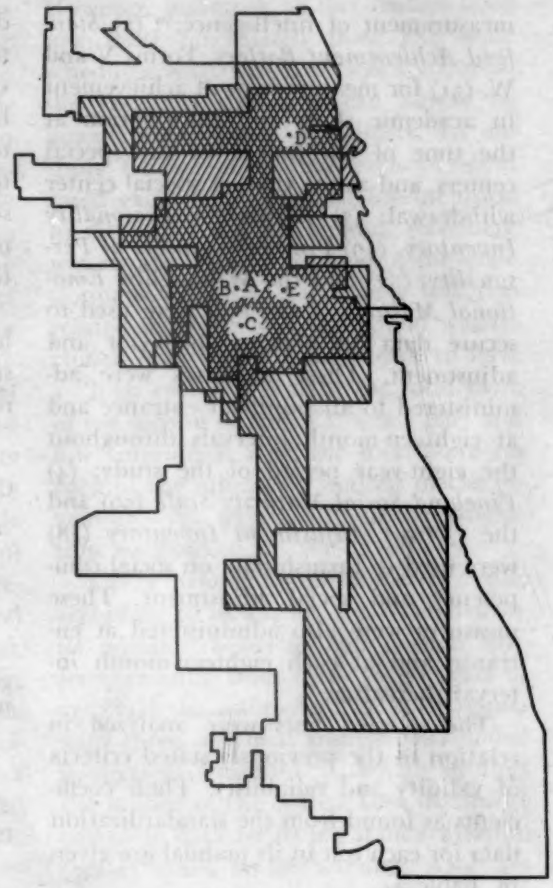


FIG. 6. Location of all subject centers and contributory areas.
Area contributing to experimental centers.
Area contributing to control centers.
5/8" = 1 mi.

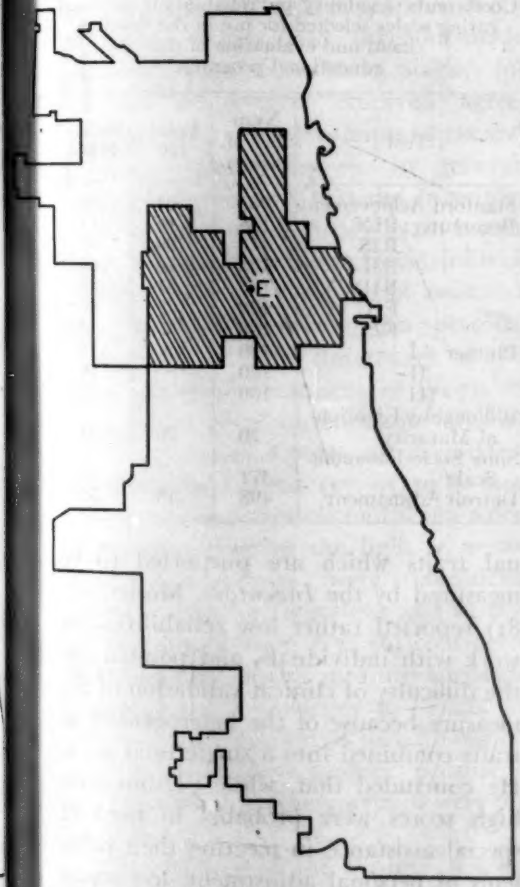


FIG. 5. Location of center "E" and contributory city area. 5/8" = 1 mi. Shaded area = area contributory to center "E".

Upon these basic criteria the following tests were selected: (1) *Stanford Revision of the Binet-Simon Tests, and Terman-Merrill Revision* (Form L), for

measurement of intelligence;[10] (2) *Stanford Achievement Battery*, Forms V and W, (51) for measurement of achievement in academic skills and information at the time of enrollment in the special centers, and at the time of special center withdrawal; (3) Bernreuter *Personality Inventory*, (49) Pintner's *Aspects of Personality*, (52) and the Willoughby *Emotional Maturity Scale*, (53) were used to secure data on personal behavior and adjustment. These measures were administered to all pupils at entrance and at eighteen-month intervals throughout the eight-year period of the study; (4) *Vineland Social Maturity Scale* (50) and the *Detroit Adjustment Inventory* (48) were used to furnish data on social competency and social adjustment. These measures were also administered at entrance and at each eighteen-month interval thereafter.

The selected tests were analyzed in relation to the previously stated criteria of validity and reliability. Their coefficients as found from the standardization data for each test in its manual are given in Table 4.

The validity of tests and scales purporting to measure "behavior," "personality," and "adjustment" have been continuously attacked because they are an attempt to measure in precise statistical manner traits and attitudes which themselves are not precisely defined or determined. These measures frequently rely on responses which may or may not be indicative of the trait being measured, and which may be prompted by a desire to respond in a socially approved manner, at the expense of truthful response, if necessary. In addition, human behavior is a complex composite of interactive factors, each influencing the total pattern; the isolation of these separate factors for identification and measurement has not yet been attained to a satisfactory degree.

The Bernreuter *Personality Inventory* has been the subject of several research studies, all of them concerned with the reliability of the scores for the individual traits which are purported to be measured by the *Inventory*. Mosier (17: 81) reported rather low reliabilities for work with individuals, and pointed out the difficulty of clinical validation of the measure because of the heterogeneity of traits combined into a single total score. He concluded that, while persons with high scores were probably in need of special assistance in meeting their problems of personal adjustment, low scores were not necessarily indicative of good adjustment.

Newcomb (17: 82) found extreme

TABLE 4

Coefficients of validity and reliability of tests and rating scales selected for use in the development and evaluation of the educational program

Test	Number of Cases	Validity	Reliability
Stanford Achievement	985	.94	.95
Bernreuter: B1N	128	.94	.88
B2S	128	.89	.85
B3I	128	.76	.85
B4D	128	.81	.88
F1C	100		.86
F2S	100		.78
Pintner I	100		.75
II	100		.59
III	100		.92
Willoughby Emotional Maturity	70	.70	.54
Sims Socio-Economic Scale	371		.91
Detroit Adjustment	498	.48	.52

[10] At the beginning of the study, in 1935, the only Stanford-Binet Scale was the 1916 form. Because the 1916 and 1937 forms are not statistically equivalent, although practically comparable, it was necessary to use the old form for all tests, both initial and retests, for groups I, II, and IV, which had begun in 1935 and 1937. For Group III, begun in 1939, the new revision, Form L, was used throughout.

scores on the *Inventory* to be characterized by a high degree of the trait being measured, when given under favorable conditions, and considered the reliabilities reported by various investigators to be satisfactory, from .85 to .90. He questioned the validity of the measures of the several traits, particularly in view of the demonstrated alternative nature of the B1N, B3I, and B4D scales. He agrees that the questionnaire is valuable as an instrument for the isolation of individuals for careful clinical or experimental study. Landis (6) reported that none of the Bernreuter scales would differentiate groups of normal college students from groups of hospitalized psychoneurotic patients. On the other hand, Stagner (9) reported subjectively observed agreement between interview impressions and scores on the inventory. In general, there was agreement that the *Inventory* could be used to advantage as an instrument for selecting the extreme individual who was highly in need of assistance in meeting and solving his personal problems but that inferences drawn from statistical treatment of group results would be of questionable validity.

The Pintner *Aspects of Personality* was found by Louttit (17: 55) to be most satisfactory as a clinical tool when scores were interpreted in the light of a case history. Responses were considered valuable cues for interviews and further counselling. Vernon (17: 56) considered the reliability of this measure adequate, but reported a tendency to "load" answers in the direction of socially respectable or desirable responses, because of the form in which the questions were presented.

The validity of the Pintner test was determined (by its authors) according to the similarity of its items to other similar schedules and questionnaires. However, inasmuch as the Pintner scale was itself formulated from the same schedules with which it was compared, the resultant similarity can hardly be acceptable evidence of validity. Its authors further state that each of them rated each item suggested for inclusion in the scale, and unanimous agreement was required for final usage in the questionnaire. Finally, each item was correlated with the total score, and was included only when it was shown to have a "high correlation with the total score of the section of which it was a part and low correlation with the total score on each of the other two sections of the inventory." (52: 3) The sizes of the correlation coefficients are not given.

The *Vineland Social Maturity Scale,* according to its author, was validated by its administration to 620 normal subjects, ranging from birth to 30 years of age, and the comparison of such results with those obtained from feebleminded subjects at Vineland. Although in 1935 the author of the Scale stated that more complete data regarding standardization (50: 1) would be forthcoming, none has yet appeared.

The validity of the *Sims Socio-Economic Score Card* was determined by the use of the scale with groups of obviously different levels of home backgrounds. (41: 25-28) The differerences in mean scores found for these differing groups was taken by Sims to be indicative of the validity of the measure.

All selected measures of behavior and adjustment were used with full recognition of their limitations of statistical interpretation, and the questionable validity of interpretations of behavior, drawn from these measures alone. They were included as sources of data in this study because they were being used in conjunction with other test data and records

of experiential activities. These inventories and rating scales were but part of complete case histories compiled for each child in the study, and were not interpreted as isolated data. Where group measures were used, they served only in addition to information secured from records of educational and employment activities, and of social adjustment within the community.

Selection of re-test interval. One of the most frequent criticisms of the validity of re-test results is the practice effect, attributed to the greater familiarity with the testing situation, and lessening of nervous tensions resulting therefrom. The selected tests had all been subjected to research by their authors to determine the maximal re-test interval necessary to remove effects resulting from all such repetitions of the tests. The requisite intervals are listed in Table 5, as found in the developmental data for each test.

The selection of the re-test interval was based on (1) the necessary interval to remove practice effects, and (2) the administrative possibility of conducting the testing program. This second factor included (1) the time of the writer available for testing, and (2) the time of the individuals who were taking the tests.[11]

The re-test interval selected and maintained throughout was eighteen months. To make the schedule flexible enough to allow for conflicts inevitable in making and keeping testing appointments, a full calendar month was considered as a unit, i.e., retests scheduled in December were programmed at any date in that month, although the exact date of the original test was maintained wherever possible. The administrative schedule for the entire evaluation period is shown in Table 6.

TABLE 5

Maximum retest interval necessary to nullify practice effect on selected tests

Test	Re-test Interval
Stanford-Binet, 1916 Form	1 year
Stanford-Binet, Form L	4 months
Bernreuter Personality Inventory	4 months
Pintner Aspects of Personality	2 weeks
Detroit Adjustment Inventory	2 weeks
Vineland Social Maturity	None
Willoughby Emotional Maturity	None

All tests used for each group were administered in the same testing periods.

During the school period, children were tested in the school building; in the post-school period, tests were given in the homes of various of the children, whose parents offered their homes for this and similar uses by this group.

Verification checks of Binet tests. Two checks were made on the validity of the Binet results. The first was the comparison of the test given by the placement bureau, which was consequently the basis for referral to the center, and the initial examination given in this study at placement. There was found to be a mean deviation of a negative 1.2 IQ points of the initial test over the placement test. The second check was a recheck verification test given to a 27% sampling at the fifth testing period, by a psychologist otherwise unconnected with the study. The mean deviation of this verification test over the regular

[11] During the in-school period, this factor was of inconsiderable importance; in the post-school period the follow-up testing program had to take into consideration the employment hours and days of the persons being tested; the family and home duties as the children began to take active part in their paternal homes, and, still later, married and established homes of their own. When the study moved out from the locale of the centers, all scheduling of testing had to include additional time for the transportation for the writer or those being tested to reach the place of testing.

fifth interval test in the study was .09 IQ points.

Continued contacts with the entire group were facilitated by the organization of an alumni association, at the suggestion of the children themselves.[12] This association met once every 2 months at the home of one of the members, and occasionally at the home of the investigator. Club meetings were usually social gatherings, with refreshments and entertainment planned and provided for by the member acting as host, with the help of their hospitality committee. In addition to its purely social activities, groups within the association initiated and carried on such service projects as Red Cross assistance, letter-writing to service men, civilian defense activities working at USO and service men's centers. They were active in bond selling campaigns in their communities. Several of them continued letter-writing to Latin-American countries which they had begun earlier. Many of them were regular donors to the Red Cross blood bank.

Twelve boys—10 from Group I and 2 from Group III—were not available for the final retest because they were then in the armed services; 2 girls in Group II were in other states at the last testing; one girl, in Group II, died of tuberculosis shortly before the final testing. Data are complete for all throughout the study, with the exception of the fifteen whose incompleteness is here explained.

Sources of additional data. The additional data included in the case histories included: (1) summaries of case records from social agencies; (2) records of employment from employers; (3) school progress and problem history; (4) records of family adjustment; and (5) record of community participation and adjustment.

To secure this information, social case histories and stenographic transcriptions of court cases were obtained through the co-operation of the courts and other social service agencies.[13] This social history included summary records of all contacts of members of the family of each pupil, as well as any contacts with him individually. These records were collected for a period antedating the study by 15 years, covering the period from 1920 to 1944.

Interviews were held by the writer with school teachers and administrators, employers, parents, community leaders, and social service workers and supervisors. Observational visits were made to schools, homes, and places of employment, and interview guides used in these

TABLE 6

Testing schedule for evaluation period beginning December, 1935, and ending December, 1943

Group	Retest Dates														
	12–35	12–36	6–37	6–38	12–38	6–39	12–39	6–40	12–40	6–41	12–41	6–42	12–42	6–43	12–43
I	x		x		x		x	x			x			x	
II		x		x			x			x			x		
III						x			x			x			x

[12] The investigator was also club sponsor.

[13] A list of cooperating agencies is included in Appendix A.

visits served an oral questionnaire function.[14]

THE EXPERIMENTAL EDUCATIONAL PROGRAM

The educational program was developed after a careful analysis of the psychobiological and predicated needs of the children in the Experimental Centers. These needs were determined by a study of personal, educational, and social backgrounds and problem-situations, from existing records, from interviews and questionnaires, and from tests and examinations. In the following chapter these needs will be detailed; and, later, the description of the resultant educational program will be presented.

CO-OPERATING PERSONNEL OF THE STUDY

The educational program and its evaluation necessitated the co-operative assistance of the following groups of professional and clerical workers: (1) placement bureau psychologists; (2) instructional staff in experimental and control centers; (3) verification retest psychologist; (4) social service assistants; (5) statistical assistants; and (6) office and secretarial assistants.

Placement bureau psychologists. The psychologists in the placement bureau all held master's degrees in psychology; in addition one had completed the doctorate in statistical method, and another in psychology. All had had a minimum of eight years teaching experience, and three years of clinical experience. (25: 274-75)

Instructional staff. The instructional staff included 11 teachers in addition to the writer. Three served in Center A, with Group I; 3 others in Center B, with Group II; and 2 in Center C, with Group III. The writer served each of the 3 centers as "head teacher," in which her duties were the planning and supervision of the educational program for the special center, and also as teacher of the social studies and the graphic and language arts. Center D was served by 3 teachers, and Center E by 2. In each of the special centers, one of the teachers (other than the head teacher) was a shop teacher, the others were academic. The responsibilities of each of these teachers in the educational program will be described in detail in a later chapter.

At the beginning of the study, each of the teachers in the experimental program had completed the minimal three-year elementary training course, and the six months' specialized course of study in the psychology and education of subnormal children, as given in the municipal teachers college; the head teacher had completed an additional six months' training in kindergarten and junior high school methods. None of the teachers held a baccalaureate degree. The regular teaching staff were totally inexperienced; the head teacher had had three years administrative and instructional experience in a private school for the feebleminded, which she had organized.

The training and experience of the instructional staff of the non-experimental centers was identical with those of the experimental centers; the teachers had been members of the same training classes. The supervising teacher had five years experience, all of it in the special classes of the city's public schools.

The verification psychologist. The verification retest psychologist had completed her master's degree in psychology,

[14] Copies of all interview outline guides and forms for the recording of data are furnished in the Appendix.

and had finished a year's work on the doctorate. She was an instructor of classes in clinical psychology for prospective candidates for the positions in the placement bureau. She, herself, had been a psychologist in the placement bureau for 4 years, resigning in order to give more time to her clinician training courses.

Social service assistants. The social service assistants were divided into 2 groups: (1) workers in public and private agencies; and (2) undergraduate students, majoring in sociology. The work of these assistants was primarily the reading and summarizing of agency case histories. The first group were experienced, professional employees of the co-operating agencies. The second group numbered 8, one of whom had had previous experience in summarizing records for veteran's service. These 8 students were given a one-week training period by the writer, which included (1) an analysis of case record format; (2) understanding of the meaning of items requested in the schedule in which the case was summarized; (3) two full days at the agency with the writer and the agency supervisor, reading and summarizing under direction. Each assistant was furnished with instructions for case summarizing.[15] Preliminary summaries were submitted to the investigator as completed, for evaluations and suggestions. All work done by these assistants was under the supervision and with the assistance of the agency supervisor.

Statistical assistants. Statistical assistants also were divided into two groups: (1) a statistical bureau, under the direction of the Department of Economics of a neighboring State University[16] (which made possible machine computations necessary for the statistical analysis); and (2) a group of six graduate students in commerce, who assisted in the scoring of tests, setting up of simple statistical distribution, and the drawing of individual growth curves from furnished basic data. These students were given a six-week training period, and were supervised throughout by the writer.

Office and secretarial assistants. Office and secretarial workers were the same group as those listed as statistical assistants. They did filing, cataloguing, transcribing of records, and checking of data, as well as general secretarial work.[17]

The planning and administration of the experimental program was the responsibility of the writer, from the point of actual enrollment of the pupils in the subject-centers, through the evaluation period, and through the subsequent period necessary for the recording and analysis of data. While assistance from professional groups was generously offered, of necessity it could be and was accepted only subject to the supervision of the researcher. The full responsibility for the accuracy and completeness of this presentation must be hers.

GENERAL METHOD OF INVESTIGATION

The general plan of research may best be described as the employment of the case-work method. Individual case histories were developed for each of the children, beginning at the time of enrollment in one of the special centers,

[15] The instructions and schedules are found in the Appendix.

[16] The Central Service Bureau of Indiana University, under the direction of Harold J. Bly, Professor of Economics, undertook the machine computations for the statistical analysis, and these were worked out by the Bureau under Professor Bly's immediate supervision and direction. The writer supervised this statistical work through indirect and direct conferences with the Director and staff of the Bureau.

[17] Complete case records, including all original data and materials, are on file in the office of the writer, in the Special Education Clinics, Indiana State Teachers College, Terre Haute, Indiana.

and including: (1) family background and social history, obtained from the parents, and also from social service case-workers, in those cases then active with a public agency; (2) previous school history, obtained from school records transferred to the center from the sending school; (3) reports of general health and physical defects, obtained from family physician, or clinic records in those cases where there was no family physician; (4) results of standardized achievement tests and clinical tests of intelligence administered shortly after special center enrollment; and (5) such measures of personal and social competency and adjustment as have been described earlier in this chapter as the tests and scales selected for use in the development and evaluation of the educational program.

Upon the basis of the personal and social needs of the children, as determined by a clinical analysis of their case histories, the experimental educational program was planned, which will be described in detail in a later chapter. The school program extended over a 3-year period, an interval designated in this study as the "in-school" period. During this period, the success of the educational program in meeting their in-school and post-school needs was evaluated by a comparison of test performance in the academic subjects; and by an analysis of their changing interests and leisure-time activities, as observed in their school hours, and as reported by them and their parents concerning out-of-school hours. In conjunction with these accounts of achievement and activity participation, results of objective measures of intelligence and of personal and social behavior, retaken at eighteen-month periodic intervals, were also included.

The follow-up study extended over a post-school period of 5 years, and continued to include the eighteen-month periodic retests of behavior, together with accounts of their voluntary education, and reports of their success and adjustments in such continued training, as obtained in interviews with their teachers; their vocational competency, as determined by their success in getting and keeping employed, according to interviews with their employers; their adjustment to home and family, according to interviews with them, and with their parents or spouses; their participation in neighborhood and community affairs, according to their own report and interviews with leaders of oganized activities. In addition to these data, interviews with social case-workers and summaries of social records furnished evidences of conflicts or lack of conflicts with the community, and with information as to the sufficiency of these children in meeting their personal and social problems as they grew toward maturity.

This dual evaluation of the educational program thus made possible some information concerning its success in terms of the intellectual growth, academic achievement, and social adjustment of the children while in school; and their final mental and educational attainment, vocational competency, and social adjustment after leaving school. From these data it should be possible to draw some conclusions regarding the educational and social desirability of such a program for children originally classified as feebleminded.

Chapter III

Personal, Social, and Academic Needs of Children at Time of Special Center Enrollment

The first step in the development of an educational program to meet the needs of the children in this study was the determination of the specific nature of those needs. For this purpose an analysis was made of their behavior patterns and academic achievement at the time they were placed in the special centers. In order to understand the factors contributing to the problems of the children at time of enrollment, a study of the physical development and mental ability of the group, and of family and educational backgrounds was also made. These data were secured from the records of the schools from which the children transferred; from interviews with parents, teachers, the examining psychologists, and family physicians; and from records at social service agencies, and conferences with case-workers on active cases.

ACADEMIC ACHIEVEMENT AND BEHAVIOR PATTERNS

At the time of transfer to the special centers, 8 children had been excluded from school previously because of low mentality,[18] and 8 were transferred from other ungraded special classes for mentally handicapped children. The remainder came from grade levels ranging from beginning first through beginning eighth grade. The mean grade placement at time of transfer was beginning fourth grade, although the largest single group was that in beginning sixth grade. An analysis of these grade placements is shown in Table 7.

Since all children transferred to the special centers had been in school from 6 to 8 years, placements in grades 1 to 5 at time of transfer evidence the arbitrary practice of continued failure, resulting in prolonged placement of adolescent boys and girls of 12 years of age in classrooms with children of 6 to 10 years. Only 33 cases, or 13.2 %, were in grade placements normal for their life age at the time of enrollment in this special center. The remaining 86.8% were retarded in placement from 2 to 6 years, with a mean placement retardation of the 4.2% grades.

Academic achievement. Grade placement at time of transfer does not imply achievement level, since in those schools in which ungraded rooms were not available the practice of automatic promotions was common. On the other hand, many schools preferred to retain children in a grade until rigid achievement requirements had been uncompromisingly met. To determine the achievement level in the academic subjects, Form V of the Stanford Achievement Battery was administered within two weeks after enrollment. The range and mean grade levels in reading and arithmetic, and the grade level equivalent for total or composite scores, are given in Table 8.

Data in Table 8 indicate that the average reading achievement for the total group was just below that of the child beginning the last half of first grade;

[18] Children whose IQ's were below 50 were recommended for exclusion from school, even from special classes. However, a special center was permitted to accept any or all "exclusion cases," if it wished to do so; it was permitted to officially excuse them from school attendance if it did not wish to accept them. The centers in this study did not exclude any cases, regardless of the low level of mental ability.

in arithmetic, the achievement was slightly lower than in reading. Composite grade level, based on total reading, arithmetic, and spelling scores, was also in the first few months of first grade. According to performance on standardized tests, their academic achievement in the tool subjects was practically nil.

Behavior patterns. In their previous school histories some of the children had been reported as socially maladjusted and had presented a variety of behavior problems of different degrees of severity. Many of the problems so reported were symptomatic rather than intrinsic; all represented conflicts with factors with which they could not cope adequately. The listings in Table 9 are given in the same categories as reported by the sending school.

In many cases more than one problem was reported for a child. It can be seen from Table 9 that 22 kinds of problems were reported for Group I, with a combined frequency of 60, for 19 children, indicating that as many as 3 and 4 behavior problem-conditions were recorded for some individual children. Twelve children in Group II carried a combined frequency of 37 in 12 different categories. Only 7 were reported as behavior problems from Group III, with a combined frequency of 37 distributed among 10 categories.

In addition to the behavior problems as reported in their histories from the referring schools, 13, or 5.1% of the total group had previous court records of truancy or delinquency; 6 cases, 2.5%, were under treatment or observation in behavior clinics; and 8 children, or

TABLE 7

Grade distribution at time of enrollment in the special centers

Placement	Group I			Group II	Group III			Total		
	Girls	Boys	Total	Girls	Girls	Boys	Total	Girls	Boys	Total
Exclusion	4	1	5	3				7	1	8
Ungraded	3		3	4	1		1	8	0	8
Primary	13	3	16	55	9	11	20	77	14	91
Intermediate	14	43	57	26	10	21	31	50	64	114
Upper Elementary	6	23	29	3	1		1	10	23	33
Totals	40	70	110	91	21	32	53	152	102	254

TABLE 8

Range and means of achievement grade levels in reading and arithmetic, and composite achievement level, as measured by Stanford achievement test, form V, at special center enrollment

Group	Reading		Arithmetic		Composite	
	Range	Mean	Range	Mean	Range	Mean
I: Boys	1.0–1.9	1.5	1.6–2.5	2.1	1.3–2.0	1.8
I: Girls	1.2–1.8	1.7	1.3–2.0	1.6	1.0–1.9	1.6
I: Total	1.0–1.9	1.6	1.3–2.5	1.9	1.0–2.0	1.7
II: Total	1.3–1.7	1.5	1.0–1.5	1.3	1.0–1.8	1.3
III: Boys	1.6–1.9	1.8	1.7–2.7	2.2	1.5–2.3	2.0
III: Girls	1.4–1.9	1.8	1.3–2.0	1.8	1.3–1.8	1.6
III: Total	1.4–1.9	1.8	1.5–2.3	1.8	1.3–2.3	1.8
Total	1.2–1.9	1.4	1.3–2.7	1.3	1.0–2.3	1.4

TABLE 9

Behavior problems presented at time of enrollment as reported by referring schools

Problem	Group I (N-19)	Group II (N-12)	Group III (N-7)	Total (N-38)
Impertinence	5	4	7	16
Shyness	8	2	4	14
Defiance	9	1	3	13
Truancy	3	4	6	13
Stealing	4		6	10
Introversion	3	7		10
Sexual delinquency	3	5	1	9
Poor nerve control	6	1		7
Egocentric	1		6	7
Smoking (Girls)	3	1	2	6
Lying	2	3		5
Frustration	1	4		5
Resentment	1	3		4
Unstable emotions	2		1	3
Inferiority	1		1	2
Social immaturity		2		2
Disobedience	2			2
Daydreaming	2			2
Delusions	1			1
Deceitfulness	1			1
Dope user	1			1
Poor muscular control	1			1
Total	60	37	37	134

slightly more than 3%, had had previous placement by the courts in special schools or institutions.

On the whole, however, the children who were studied in this investigation were not primarily behavior problems, if judged by the reports of their previous school records of social delinquency. Table 10 shows that only 38 children, or 14.9% of the group, were reported as socially maladjusted in their school situations before transfer to the special center. Using school report and court records as criteria for classification as "behavior problems," and disregarding degree of deviation in the behavioral pattern so classified, Table 10 indicates behavior and non-behavior problems in each of Groups I, II, and III in the study.

TABLE 10

Behavior and non-behavior problems in groups I, II, and III at time of enrollment in special centers, according to previous school and court records

Group	Behavior	Non-Behavior	Total
I Boys	9	61	70
I Girls	10	30	40
I Total	19	91	110
II Total	12	79	91
III Boys	3	29	32
III Girls	4	17	21
III Total	7	46	53
Total Boys	12	90	102
Total Girls	26	126	152
Total Boys and Girls	38	216	254

Table 10 shows that there were slightly more behavior problem girls than boys, the percentage of "problem" girls to the total number of girls being 17.1, while the precentage of "problem" boys to the total number of boys was 11.7%. However, it must be remembered that the criteria for this classification were subject to the following limitations:

(1) Reports from schools were voluntary, and selection of behavior problems to be reported as problems was dependent on the judgment of each person filing a referral

(2) Absence of a report of a problem cannot be understood to mean that no problem existed, since individuals varied in their criteria for the evaluation of acceptable social behavior

(3) Court records were limited in practice, although not necessarily in theory, to cases of aggressive emotional or personality conflicts, and children whose primary problems were less overt were likely not to come to the notice of the courts

In addition to the records of social conflict with the school or community, as evidenced by school reports of behavior problems and by court records, another index of adjustment was found in the analysis of the personal and social activities of these children in comparison with some qualities which were assumed as desirable in adolescent behavior. The qualities so assumed were the following, found by Doll (4) to represent the social maturation level of normal adolescents, from 12 to 18 years of age: (1) emancipation from home and family; (2) self-responsibility; (3) mature heterosexuality; and (4) social maturation.

Indications of emancipation from home and family were considered to be evidenced by freedom from parental attendants in going to and from school, independent use of city transportation, freedom in choice of clothes, independent use of leisure time, independent management of allowances or part-time earnings, and the freedom to select one's own friends. Evidences of self-responsibility were assumed to be shown by regularity of school attendance, getting and keeping part-time jobs, holding positions of leadership in school or community activities, the capable fulfillment of service positions in school offices and associations, pride in personal appearance and in the self-initiated use of medical and dental clinic facilities to maintain good health. Mature heterosexuality was judged by choice of companions in group recreational activities in school, and in leisure-time interests outside of school hours. Evidences of social maturation were assumed to be found in increased use of various means of social communication, in enjoyment of simple creative work, and in a willingness and ability to accept responsibility for assisting in the care of the home. Information concerning these activities at the time of special center attendance was obtained by interviews with parents and former teachers, and the data thus secured have been summarized below.

Some indication of the level of emancipation from home and family shown by the group can be found in the number of children exercising freedom in given personal activities at entrance to the special center. These data are presented in Table 11.

Those activities which are shown in the above table to have been practiced by none of the children were those in which no freedom of behavior had been permitted by parents, previous to special center enrollment. Likewise, "use of city transportation," and "freedom from parental attendants," were both influenced by the parental practice of accompanying children on all trips away

TABLE 11

Frequency of independence exercised by pupils in certain activities assumed to be indicative of emancipation from home and family

Activity	Number
Independence in personal care	82
Freedom to make minor decisions	36
Choice of friends	24
Use of city transportation	11
Freedom from parental attendants	11
Choice of clothes and style	2
Use of personal allowance	0
Independence of income	0
Use of leisure time	0

from the home. At the time of special center enrollment many of the boys and girls had not been more than a block away from their homes unescorted.

The amount of self-responsibility of the children was assumed to be indicated, in part, by their practice of certain kinds of activities. The numbers who were found to be practicing these activities at entrance to the special center are shown in Table 12.

As can be seen from the above table only 3 such activities were practiced by any of the children at entrance. "Service positions" included all types of appointments which entailed responsibility for specific duties, such as patrol boys, guides for blind pupils, chairmen of various school drives, or "helpers" with primary children on the playgrounds and in the lunch-rooms. "Positions of leadership" referred to offices to which these boys and girls were elected by other pupils. "Regularity of school attendance" was considered to mean attendance 95% of the time, or more, except in cases of prolonged legitimate absences. None of the children held part-time employment at entrance, nor did any of those who received an allowance exercise control over its expenditure.

TABLE 12

Frequency of practice of certain activities considered to be indicative of self-responsibility

Activity	Number
Management of personal transportation fares	11
Care of personal appearance	7
Regularity of school attendance	3
Service positions	0
Part-time employment	0
Positions of leadership in school and community	0
Management of part-time earnings or allowances	0

The kinds of social activities, i.e., the performance of co-operative duties in a social group such as the family or the school, and the use of indirect communication to facilitate person-to-person interaction, these activities were also taken as a measure of social maturation at the beginning of special center attendance. The numbers of children who performed such duties, or practiced such social communication are shown in Table 13.

In addition to the attainment of desirable qualities of behavior, an important criterion was considered to be the adaptive processes used in the meeting of conflict situations. Satisfactory mechanisms were those of simple, direct response, employed in a purposeful change of the behavior situation. This change consisted of (1) change in the reactive condition of the organism; or (2) a removal of the stimulus; or (3) the removal of the organism from the stimulus situation. Unsatisfactory mechanisms were those of diffuse or mass response, involving strong emotional reactions and purposeless behavior; and indirect or substitute mechanisms, such as withdrawal patterns of timidity, negativism, phantasy, fears, and schizophrenic tendencies; rationalization, such as projection of blame on people or circumstances, and systematized paranoia; and compensatory patterns, such as substitution of physical for mental superiority,

TABLE 13

Frequency of practice of certain activities considered to be evidence of level of social maturation

Activity	Number
Uses telephone communication	47
Helps in chores at home	45
Uses mail communication	31
Does simple creative work	3
Earns allowance, or has part-time job	0
Enjoys leisure reading	0
Budgets earnings or allowance	0

or undue aggressiveness for cowardice. (30:3)

From information secured from former teachers, from parents and social workers, as well as from careful observation of each of the children during his first 2 weeks in the special centers, an analysis was made of the mechanisms most frequently used by each in meeting conflict situations. Table 14 indicates the number of children who used most frequently each of several possible kinds of responses in conflict situations.

According to the findings in the above table, most of the behavior of the children at entrance was characterized by fear, a characteristic exhibited by approximately one-third of the group. About one-sixth resorted to compensatory mechanisms in meeting conflicts, while only about one-tenth met such situations by direct response.

TABLE 14

Mechanisms used most frequently by children in meeting conflict situations at entrance, as recorded from observed in-school behavior and from interviews with parents, social workers and former teachers

Mechanism	Number
Fears	86
Compensation	44
Timidity	41
Negativism	28
Direct response	23
Phantasy	17
Projection of blame	15

Summary of academic achievement and behavior patterns. At the time of enrollment in the special centers, the children in this study ranked in the first half of first grade, according to their academic achievement levels, despite the fact that they were all 12 years of age or older. They were in need of improvement in all the tool subjects. Their behavior was characterized by mechanisms of fear, and by few indices of positive adjustment in personal or social adjustment. However, although a small number were reported as having serious behavior problem records in their former schools and in the courts, the large percentage were non-behavior problems according to those criteria.

CHARACTERISTICS OF PHYSICAL DEVELOPMENT AND MENTAL ABILITY OF THE GROUP

Two areas of individual development of significance in the determination of the needs of a group are the physical and mental development of that group. Estimates of the general health of the children, and reports of their physical defects or handicaps, were obtained from their family physician, or from the hospital or clinics at which they had received treatment, in those cases where there was no physician in regular attendance. The reports of the examining psychologists were source data for the study of mental ability.

Physical development. According to the estimates of their family physicians at the time of enrollment, 96 children, or 38% of the total, were rated as in fair or poor health; while only 34, or 13.3%, were rated as being in good general health. Boys were rated slightly higher than girls, as is shown in Table 15.

According to this table, Group II is shown to be the poorest in general health, since over half of its members were rated as fair or poor, and only one-ninth were rated excellent. The girls in Group III were by far in the best physical condition, since none were rated lower than good, and two-thirds were rated excellent.

Another factor contributing to a determination of the needs of the group was a study of the types of physical

TABLE 15

General health of children according to estimates of their family physicians at time of enrollment

Group	Girls				Boys				Total		Grand Total
	Poor	Fair	Good	Excel-lent	Poor	Fair	Good	Excel-lent	Girls	Boys	
I	6	13	20	1	3	11	54	2	40	70	110
II	28	23	30	10					91		91
III			7	14	1	14	10	7	21	32	53
Total	34	36	57	25	4	25	64	9	152	102	254

defects found in children at the time of their enrollment. The most serious handicap, on the basis of number of cases, was defective vision. Degree of severity ranged from very slight loss to almost total blindness. Second and third, respectively, were dental problems and hearing, and in the latter, degree again ranged from slight loss to one case of total deafness. Table 16 shows the distribution of 15 types of handicap found in boys and girls, separately, and in the group as a whole.

27.6% of all girls, and 43.1% of all boys were free of any physical defects or malfunctions. By a comparison of Tables 15 and 16 it will be seen, therefore, that not only were the boys as a group in slightly better general health, but there were found also to be more boys without physical handicap. The 15 defects listed in Table 16 were found to have a total frequency of 205, distributed among 110 girls, indicating that many of the girls possessed 2, and some, 3 defects. Only 10 of these defects were found among the boys, with a total frequency of 94 among 58 boys, showing that of those boys possessing some handicap, many of them presented more than 1. While fewer boys than girls were physically handicapped, the degree of defect was similar for both sexes. Despite the incidence of physical defect

TABLE 16

Physical defects found in one hundred sixty-eight children at the beginning of the study

Disability	Girls				Boys				Total
	I	II	III	Total	I	II	III	Total	
Vision	25	51	7	83	30		8	38	121
Dental	10	15	3	28	13		2	15	43
Hearing	10	14		24	16		1	17	41
Anemia	7	24	3	34	5			5	39
Tuberculosis	10	6	1	17	3		1	4	21
Speech		3		3	6			6	9
Cardiac	2	5		7					7
Spastic					5			5	5
Crippled		1		1			2	2	3
Thyroid Dysfunction	3			3					3
Epilepsy		1		1	1			1	2
Chorea		1		1	1			1	2
Chronic Asthma		1		1					1
Infantile Paralysis	1			1					1
Pituitary Dysfunction	1			1					1
Total	69	122	14	205	80		14	94	299

found to be present, only 9% of the cases were receiving clinical care, or had had hospital care in the 6 month period prior to the beginning of the study.

Mental development. The mental ability of the group as a whole has been described by the fact that all children in the group had been classified as feeble-minded, having IQ's of less than 70, according to Stanford-Binet tests administered by the psychologists of the placement bureau. The range of the group was from a low of 27, with a median of 53.1. The distribution of IQ's according to groups is shown in Table 17.

From Table 17 it can be seen that the range for each of the groups was approximately the same. Although the absolute difference in mean IQ varied slightly between groups, none of the differences were statistically significant, as shown in Table 18.

TABLE 17

Medians, means, and sigmas of placement IQ's for Groups I, II, and III

Group	Range	Median	Mean	Sigma	N
I: Boys	27–69	46.3	47.94	10.3	70
I: Girls	35–69	55.0	52.5	10.0	40
I: Total	27–69	50.6	49.58	10.44	110
II: Girls	35–69	55.5	53.47	8.64	91
III: Boys	39–69	60.0	57.62	7.68	32
III: Girls	27–69	44.2	46.02	9.68	21
III: Total	27–69	55.2	53.03	10.24	53
Total Boys	27–69	51.0	51.0	10.56	102
Total Girls	27–69	53.1	52.2	9.53	152
Grand Total	27–69	53.1	51.7	9.97	254

TABLE 18

Sigmas of difference and critical ratios of mean placement IQ's in paired groups

Groups	Sigma of Difference	Ratio of Difference to Sigma of Difference
I and II	1.345	2.88
II and III	1.671	.26
I and III	1.720	2.01
All boys and all girls	1.655	.79

Accepting a critical ratio of 3 as indicative of a significant difference, it can be seen that all groups included in the study were comparable. Of the three, Group I was the most different from the other two, but the resulting critical ratios were not large enough to be statistically significant. The total group of boys was almost identical with that of the girls.

Summary of physical development and mental ability. As a group, the children who were included in this study were in low average general health, with over two-thirds handicapped also by physical defects. They were all classified as feeble-minded, with a mean IQ of 51.7, based upon clinical mental tests. While their educational achievement was of the beginning first grade level, their grade expectancy, according to their mental ages, was also only at that level. In relation to their mental ability they could not be considered as academically retarded.

ENVIRONMENTAL BACKGROUNDS: FAMILY SOCIO-ECONOMIC PATTERNS

The children who were the subjects of this study came from widely differing home, school, and community backgrounds. Their parents were for the most part from the semi-skilled and un-

skilled occupational levels, although a few were from the professions. A large number were unemployed a great part of the time, resulting in low subsistence standards of living, and frequently in complete economic dependence on public welfare assistance. While the homes of some of the children were in the highest rental areas of the city, most of them were located within an area of 3 square miles in the heart of the near north side, a section predominantly industrial, where most of the homes were former factory buildings or shops, which no longer met safety and sanitation requirements. Many of the parents had long histories of mental or physical illness, or both, and the children themselves presented numerous physical defects and abnormalties. These major environmental factors contributing to the personal, social, and academic needs of these children at the time of their special placement will be presented in this section.

Family backgrounds and socio-economic patterns. One-third of the pupils were from Mediterranean stock, while the ancestry of the remainder was scattered among 11 other countries, as shown in Table 19.

All but 7 of the children were native born Americans. Of the foreign-born, 2 each had been born in Poland and Italy, and 1 each in Greece, Germany, and France. All 7 had been resident in this country 3 years or longer.

While almost all pupils were of the Caucasian race, there were a small number of Indian ancestry, and a slightly larger group from gypsy[19] tribes.

Economic status. In 1935, the year in which this study was begun, the country was still feeling the effects of the national depression which had had its beginning 6 years before. Measures to regulate economic practices artificially had been attempted in order to stimulate trade and reopen commercial channels. National and state governments had put into effect legislation providing financial assistance to the unemployed, as well as to the dependent, handicapped, and disabled. While some improvements had been made in the national picture over that of the period from 1929 to 1932, economic conditions were far below their status prior to the depression.

TABLE 19
National origins of all subjects

Nationality	Group I	Group II	Group III	Total
Italian	19	28	34	81
Polish	39	13	4	56
German	23	7	8	38
Czechoslovakian	1	12	1	14
Roumanian	2	11		13
Irish	1	8	1	10
Greek	7	3		10
Jewish	6	3		9
English	5	1	3	9
Norwegian	3	4	1	8
French	2	1		3
Mexican	1		1	2
Scotch	1			1
Total	110	91	53	254

In 1935 the Departments of Agriculture and Labor (46: 78) computed a "maintenance level" for a family of 4 which allowed for a 4-or-5 room apartment kept in fair repair, with indoor bath and toilet facilities, but which permitted no savings, life-insurance, or allowance for medical care, and budgeted only very meagerly for food and clothing. In Fig. 7 the comparison is shown between the median family incomes of these subjects and the 1935 "maintenance level income," the median nation-

[19] The term gypsy is used to designate those transient "clans," in which race is so mixed as to make a definite classification difficult and inaccurate.

al wage-earned income, (46: 83) the median metropolitan wage-earned income, (38: 25) and the median income for families of comparable size in areas of comparable poulation. (46: 81)

therefore receiving full support from public assistance, as compared with 36%, the national percentage fully dependent upon public welfare agencies for support during 1935. (46: 81)

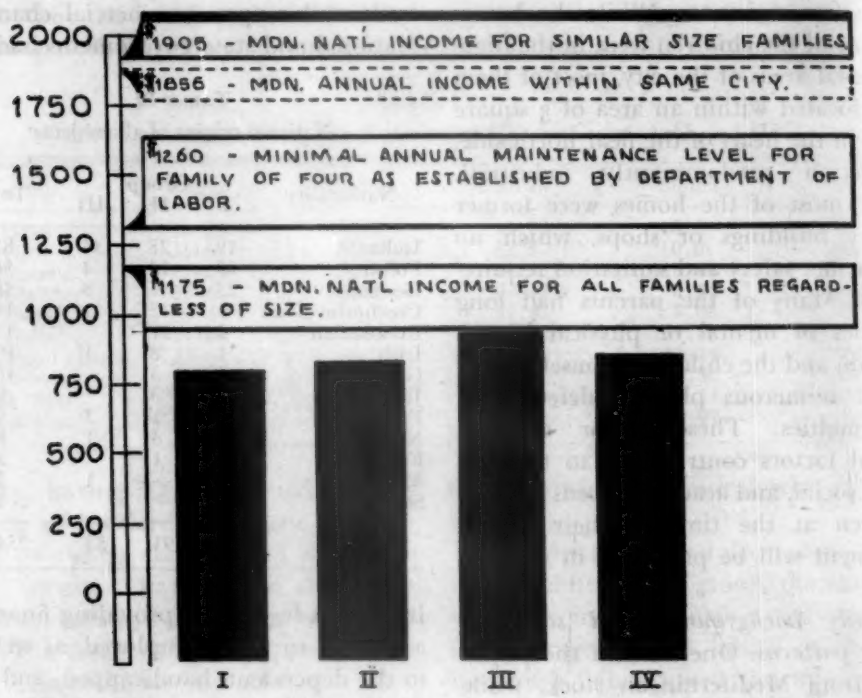


FIG. 7. Median family income by groups compared with city and national norms, 1935.

Figure 7 shows that the median family income in the experimental groups fell below every national norm of standard or level, and far below the median income for all wage-earners of that city for that year. The total median fell below the maintenance level by $400, or 34%, despite the fact that that level was established for a family of 4, and the average family size in the experimental group was 6. The average earned income for this group was but one-third of the national median income for families of similar size. Approximately 23% of all cases were in families where the wage-earners were unemployed, and were

The maintenance level budget was based upon an expenditure of 17.6% of family income for rental. Because of over-crowded living conditions and excessive demands for dwellings in this area, considerable higher percentages of income were spent in rents by these families, although the rentals paid were of lower absolute amounts than that provided for in the maintenance level, as shown in Table 20.

Although a greater part of their incomes was spent in rentals than the maintenance standard, in general the dwellings did not meet the requirements for adequate housing defined by the

committee on housing of the American Public Health Association as "fundamental minima required for the promotion of physical, mental, and social health, essential in low-cost as well as high-cost housing." (12) Summarized briefly, these requirements included: (1) adequate heat, light, ventilation, and play space; (2) freedom from undue or irritating noise; (3) adequate space for privacy within the family and community for normal interests and relationships; (4) adequate hygiene and sanitation provisions; and (5) protection from accidents.

Upon the basis of these requirements, 58.5% of all the homes fell below the average in adequacy of housing conditions.

A composite index of the standing of a family in reference to factors influencing their level of living can be found by a comparison of its socio-economic rating with norms of the community in which it lives. Sims points out that such items as occupational level, rental, possession or non-possession of books and magazines, the extent to which physical necessities and luxuries are provided, and the degree of group participation engaged in by a family result in definite cultural and economic differences in environment. (4: 15) Shuttleworth has shown in his further analysis of data in the Harvard Growth Study, the cumulative effect of socio-economic levels on intelligence over a period of years. (35: 275-280) Skeels demonstrated the retarding effect of poor homes on mental development, in his study of children committed to the Iowa Soldier's Orphans Home. (35: 281-308) In summarizing the interaction of heredity and environment in mental deficiency, Brown states that feeblemindednes "begins with ignorance, poverty, public contempt, exploitation, and general inferior social status as interactive factors." (16: 316)

TABLE 20

Median annual incomes and rentals of experimental group compared with standard norms

Group	Income	Rental	Ratio of Rent to Income
I	$ 819.36	$216.00	.263
II	841.92	179.40	.213
III	944.64	173.40	.183
Total	862.08	193.20	.224
Maintenance Level	1261.00	222.00	.176
Same size families	1905.00	252.00	.132

TABLE 21

Mean socio-economic ratings of all families at beginning of the study

Group	M	Sigma	Mean Percentile Rank	Qualitative Interpretation
I	6.35	3.46	28.1	Low
II	4.59	2.15	18.3	Low
III	4.37	2.34	18.2	Low
Total	5.51	4.06	24.3	Low

Using Sims Score Card, the homes of all children were rated at the beginning of this study and interpreted into corresponding qualitive levels of socio-economic status. While the median rating was "low" for the total group, the range extended from "high" to "indeterminately low." The classification of these ratings in each group is shown in Table 21.

The home environments from which the children in this study came were substandard, both in absolute and relative, or comparative, measures of economic and cultural levels. Their incomes and rentals did not reach even the lowest necessary minima for healthful living as

set forth by government, medical, and social agencies.

Physical and mental health. Closely related to family economic status and dependent upon it to some degree at least is the physical and mental health of its members. This relationship is particularly evident from 25 to 64 years, (34: 1-17) the age group which includes the parents of all subjects of this study.

TABLE 22

General physical and mental health of parents according to estimates of their family physicians

Estimate	Mothers				Fathers			
	Group I	Group II	Group III	Total	Group I	Group II	Group III	Total
Poor	21	31	20	72	16	13	3	32
Fair	17	8	11	36	14	10	11	35
Good	48	30	7	85	46	36	18	100
Excellent	13	13	13	39	17	19	14	50
Deceased	9	6	2	17	8	8	3	19
Deserted	2	3	0	5	9	5	4	18
Total	110	91	53	254	110	91	53	254

Based upon estimates made at the beginning of this study by their family physicians, almost half of the mothers, and over one-fourth of the fathers were in poor or fair general health. Slightly less than one-tenth of both parents were, or had been, under prolonged care at medical or psychiatric clinics and hospitals. Three per cent were in state institutions, either for the feebleminded or the insane. Details of the parental physical and mental health are set forth in Table 22.

Family social adjustment in the home and community. Low incomes, poor housing conditions, poor health, unskilled occupational levels, and lack of cultural advantages in the home, all are factors militating against success and competency in family and community relationships. Poverty and illness and their concomitant lack of security complicate home situations, increasing emotional strain and personal friction between members of a family. Lack of physical necessities wears down resistance and weakens moral tone as well as personal traits of aggressivesness, industry, and initiative. An analysis of parental attitudes in relation to family financial status, conducted by Blackey in her study of 50 special class graduates, (2) concluded that healthy attitudes in parents varied directly with a rise in economic status. Conversely, Meltzer (7) found that children living on the lowest economic level had the least pleasant attitudes toward their parents, and were consequently more hostile and repressed and showed more parental despondency in their family relationships, than children of higher income levels.

> "Money and material are only part of a family's resources. There are also social resources. . . . Usually poverty goes hand in hand with a lack of social resources. Meager resources cut down the potential family capability, and color the members' mental estimate of themselves and their importance in relation to the others. (15: 185)

Some insight into the kinds of personal and community problems which

these families faced at the beginning of this study can be gained by a study of their contacts with social agencies, and the types of cases then active. These agencies have been grouped for purposes of classification in the following manner: (1) advisory and protective agencies; (2) welfare and dependency agencies; (3) behavioural and psychiatric clinics; (4) medical clinics and hospitals; (5) special schools and institutions, and (6) courts.

Table 23

Family cases active at social agencies at beginning of the study

Kind of Agency	Group I	Group II	Group III	Total
Advisory and protective agencies	3	3	9	15
Welfare and dependency agencies	32	49	26	107
Medical clinics and hospitals	6	1	7	14
Behavioural and psychiatric clinics	1	5	0	6
Special schools and institutions	1	3	4	8
Courts	2	0	0	2
Total	45	61	46	152

Almost half of all subject families were dependent on public agencies for financial assistance, at least in part, and many of them in full. About one-fifth were receiving medical or psychiatric clinic or hospital treatment at public expense. Table 23 shows the number of families who were active in each of these kinds of social agencies at the beginning of the study.

One hundred five families, or 40% of the total group had no active contacts with agencies at that time. The 152 cases recorded in Table 23 represented 149 families, or approximately 60% of all subject families.

For the most part, the homes in which the subjects of this study lived were substandard financially, culturally, and emotionally. While many individual families functioned on a satisfactory level of relationships, and some few on a high level, these were the exceptions, throughout the group. The great majority were markedly deficient according to socially accepted standards.

ENVIRONMENTAL BACKGROUNDS: CONTRIBUTORY SCHOOLS AND RESULTANT EDUCATIONAL PATTERNS

The children in this study were referred to the experimental centers from schools scattered over an area of 64 square miles, the greater part of the metropolitan area. All but 2 referrals were from regular city public schools, operating in the same system as were the special centers. Of these 2 exceptions, 1 was from an out-of-town convalescent home, where the special placement was recommended effective immediately upon release of the patient from the home; and 1 was from a school in a small city, 72 miles beyond the metropolitan limits. Both these out-of-town placements were in response to parental requests and with administrative approval.

In all, 46 contributory schools were represented. The number of children referred by any one of these schools ranged from 24 in one instance to single cases from 16 of the schools.

Despite the number of different re-

TABLE 24

Population and housing in community areas contributing to experimental group

Area Number	Total Population	Owner Families	Tenant Families	Size of Family	Number of Dwellings	Ratio of Families to Dwellings	Median Rental	Economic Class	No. in Study
1	57,094	2,168	15,663	3.1	4,824	3.6	67.50	Very high	1
2	39,759	3,780	6,874	3.6	5,199	2.0	67.50	Very high	2
3	108,583	4,672	29,051	3.2	9,926	3.4	67.50	Very high	4
4	46,419	3,403	9,948	3.5	5,085	2.6	39.50	High	1
5	47,651	4,969	8,211	3.7	7,223	1.9	24.50	Low	6
6	128,066	5,611	27,137	3.9	10,625	3.0	39.50	High	3
7	97,873	4,593	20,073	3.9	9,332	2.7	24.50	Low	7
8	79,554	1,853	15,780	4.4	5,357	3.2	24.50	Low	7
11	20,392	3,191	1,828	4.0	3,893	4.8	39.50	High	1
13	11,052	1,092	1,545	3.7	1,432	3.0	67.50	Very high	1
14	55,577	4,865	9,399	4.0	6,996	2.0	67.50	Very high	2
15	64,203	6,458	9,749	4.0	12,000	1.3	39.50	High	1
16	66,783	7,112	10,880	3.8	10,264	1.8	32.50	Medium	1
19	60,221	8,202	6,246	4.3	10,345	1.4	32.50	Medium	7
20	23,518	2,819	3,404	4.0	3,643	1.5	67.50	Very high	2
21	48,433	4,616	7,841	3.7	6,422	2.0	24.50	Low	2
22	114,174	8,665	20,581	3.9	13,481	2.1	32.50	Medium	8
23	80,835	7,180	12,779	4.1	10,486	1.8	24.50	Low	14
24	187,551	9,930	33,000	4.3	16,598	2.4	14.00	Very low	76
25	131,114	12,972	22,067	3.7	17,998	1.9	67.50	Very high	2
26	50,910	3,916	9,004	4.3	5,182	2.4	67.50	Very high	1
27	60,125	3,285	11,693	4.0	6,811	2.1	32.50	Medium	11
28	153,761	5,480	24,304	5.1	14,810	4.3	14.00	Very low	31
29	113,054	5,959	18,347	4.7	9,691	2.4	32.50	Medium	2
30	76,749	7,843	10,681	4.1	9,808	1.8	32.50	Medium	2
31	166,174	4,074	12,364	3.9	6,307	2.7	14.00	Very low	13
32	7,851	4	323		141	2.3	14.00	Very low	1
33	10,416	1,047	1,811	2.3	760	2.5	14.00	Very low	14
34	21,456	999	3,987	4.2	2,434	2.5	14.00	Very low	1
37	14,437	1,038	2,368	4.1	2,028	1.7	67.50	Very high	1
38	87,005	2,026	18,481	4.1	6,480	3.2	24.50	Low	1
40	44,178	819	9,360	4.3	2,818	3.7	67.50	Very high	1
41	48,017	1,478	12,436	2.0	2,735	8.8	14.00	Very low	1
42	66,052	2,309	14,917	2.6	4,813	3.6	14.00	Very low	3
43	78,515	5,095	18,463	3.3	6,907	3.4	67.50	Very high	1
44	36,228	3,062	7,050	3.6	4,761	2.1	24.50	Low	2
45	10,023	1,728	929	3.8	2,068	1.3	32.50	Medium	1
46	56,683	4,802	7,462	4.3	6,944	1.8	67.50	Very high	2
47	3,483	432	266	4.9	581	1.2	32.50	Medium	2
48	7,343	854	772	4.6	1,179	1.3	39.50	High	1
49	42,983	5,675	4,888	3.9	7,834	1.3	39.50	High	1
50	6,705	747	783	4.2	1,135	1.4	67.50	Very high	1
51	7,898	727	749	5.2	1,117	1.3	67.50	Very high	1
59	22,032	2,160	2,787	4.2	2,994	1.6	24.50	Low	1
60	53,547	4,064	8,356	4.1	6,449	1.9	14.00	Very low	1
61	86,906	6,849	12,350	4.5	9,932	1.9	32.50	Medium	1
66	47,462	6,266	5,682	4.0	8,173	1.5	24.50	Low	1
67	63,845	7,932	7,187	4.2	10,647	1.4	32.50	Medium	1
68	89,063	6,942	15,605	3.9	11,955	2.5	32.50	Medium	3
69	59,474	5,993	9,900	3.8	9,051	1.7	24.50	Low	3

ferring schools, the educational backgrounds of the children at the beginning of the study were similar in many respects. All had been in the classrooms of the city public schools for 6 to 8 years, since they had been in attendance from the time they were 6 years of age. The curricula in the classes from which they had come had been organized around formalized courses of study, standardized for each grade in the city system. Each of the referring schools carried on its instructional program almost exclusively through large group methods, using text-book recitations and question-and-answer procedures.

To the extent that the curricula and methods of teaching were standardized throughout the school system of which these contributory schools were a part, the educational backgrounds of the children in this study can be said to have been similar.

ENVIRONMENTAL BACKGROUNDS: CONTRIBUTORY COMMUNITY BACKGROUNDS

The community in which a family lives and works itself exerts an external pressure upon the family. Its institutions and customs, its economic level, its housing, health, sanitation facilities, and its attitudes towards law and convention, are all elements in the social situation with which individuals and groups interact. Sub-standard neighborhoods develop a community pattern of defeatism, which, together with inadequate physical living conditions, militates against attempts of individuals or families to rise above it. (15: 217)

In Figures 8*a* and *b* the metropolitan district has been divided into its component community areas,[20] the shaded section *b* showing the extent of the district contributing pupils to the experimental group. Table 24 gives the population of each of these community areas, number of dwellings in each, economic value according to property values, median rental, median size of families, and the ratio of families to dwellings. It can be seen from Figure 8 that of the 75 community areas established by the

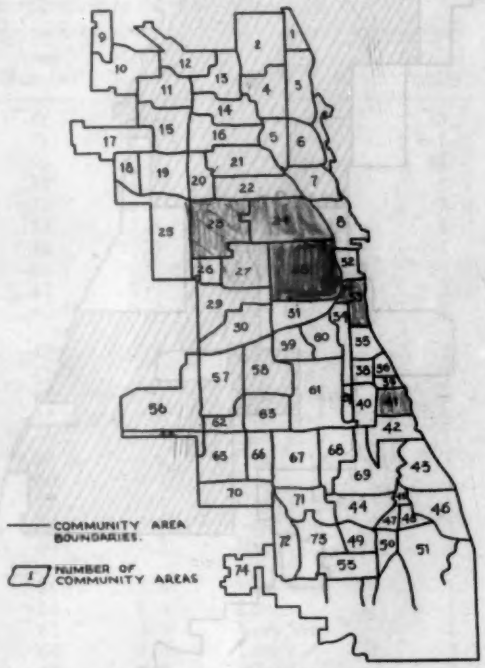


FIG. 8a. Community Areas Established by the United States Bureau of the Census.

United States Bureau of the Census, 53 were repesented by pupils in this study. Of the 22 not represented, 8 were exclusively industrial areas;[21] thus, slightly more than 79% of all neighborhoods in the city contributed children to this group.

From Table 24 it can be seen that the largest number of pupils came from communities numbered 24 and 28.

[20] as established by the United States Bureau of the Census in 1930.

[21] community areas numbered 35, 36, 38, 39, 50, 52, 55, and 54.

These 2 areas were also highest, according to total population, but lowest according to economic value of the prop-

FIG. 8b. Community areas contributing pupils to subject centers.

erty. Both neighborhoods were made up predominantly of tenant families, since 77% of the families in area number 24, and 80% in area number 28 rented their homes. The average size of family in these neighborhoods ranked well above the city median of 4.0; area number 28 ranked second highest of all communities in the city, with an area median of 5.1, and area number 24 ranked ninth with an area median of 4.3. Table 24 also shows that 22 children, or 8.6% of all cases in this study came from areas of the highest economic level;[22] eight children, or 3.1% came from areas of high economic levels; 39, or 15.3% came from middle-class areas; 44, or 17.3% came from low economic levels; and 141, or 55.5% came from the very lowest level.

In addition to the material level and standards of the home, a major environmental factor is that of moral standard

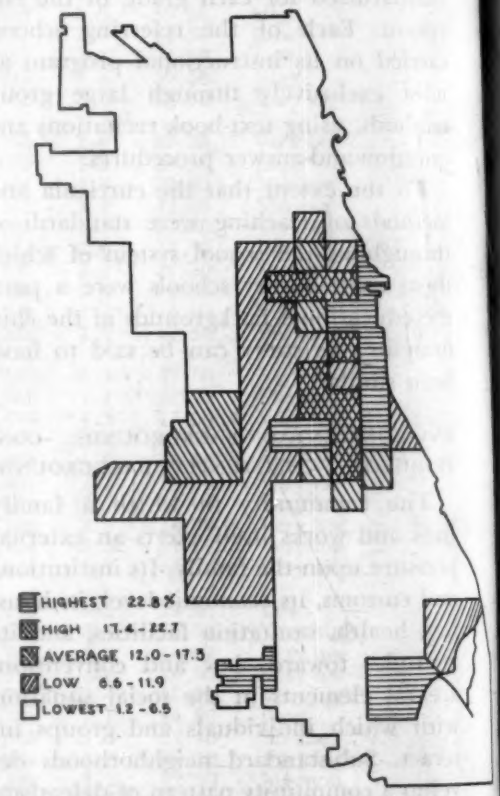


FIG. 9. Rates of delinquency of Community Areas

and attitudes toward law and order. Young points out that "culture patterns of crime and delinquency which often surround youngsters in certain sections of our cities greatly influence the direction of their interests and behavior."

[22] based on property values as reported in the Fifteenth U. S. Census in 1930.

(47: 628) Shaw has shown the relationship between rates of delinquency and socio-economic levels of a community, and has demonstrated specifically the concentricity of delinquency in urban communities. (40: 68) From the basic data used in his study, a map was prepared (Figure 9) showing comparative rates of delinquency by square miles in the city. Comparing Figures 8 and 9 it is apparent that the two areas contributing heaviest to the experimental group, communities numbered 24 and 28, are made up of smaller block sections ranging from the very highest rates of delinquency in the entire city to block sections of low rates. The total contributory city area included neighborhoods ranging from the very highest to the lowest in delinquency rates.

Table 25 lists the mean rate and comparative rank classification within the city for each community area.

The areas contributing heaviest to this study, numbers 24 and 28, carried a mean delinquency rate of 15.3%, indicating that slightly more than 15 out of every 100 children and youths residing in these areas had records of delinquency or crime. Community area number 24, which contributed 30% of all cases in the experimental group, ranked as "average" in rate of delinquency in comparison with the entire city; community area number 28, contributing 12.2% of the group, ranked as "high," with a mean rate of 17.1%. Table 25 shows that 14 cases, or 6.3% came from areas of highest rate, the mean rate being 22.8%; 34 cases, or 13.3%, came from areas which ranked as high, and where the mean rate for the combined areas

TABLE 25

Delinquency in community areas contributing to experimental group

Area Number	Mean Rate	Class	No. in Study	Area Number	Mean Rate	Class	No. in Study
1	3.9	Very low	1	31	12.9	Low medium	3
2	3.9	Very low	2	32	21.9	High	1
3	3.9	Very low	4	33	22.8	Very high	14
4	3.9	Very low	1	34	14.7	Medium	1
5	3.9	Very low	6	37	20.1	High	1
6	3.9	Very low	3	38	22.8	Very high	1
7	5.7	Low	7	40	14.5	Medium	1
8	17.4	High medium	7	41	3.9	Very low	11
11	3.9	Very low	1	42	3.9	Very low	3
13	3.9	Very low	1	43	3.9	Very low	1
14	3.9	Very low	2	44	3.9	Very low	2
15	3.9	Very low	1	45	3.9	Very low	1
16	3.9	Very low	1	46	13.2	Low medium	2
19	3.9	Very low	7	47	3.9	Very low	2
20	3.9	Very low	2	48	9.3	Low	1
21	3.9	Very low	2	49	8.6	Low	1
22	3.9	Very low	8	50	10.2	Low	1
23	3.9	Very low	14	51	16.1	High medium	1
24	14.5	Medium	76	59	7.0	Very low	1
25	3.9	Very low	2	60	20.1	High	1
26	3.9	Very low	1	61	22.8	Very high	1
27	6.1	Low	11	66	9.3	Low	1
28	17.1	High	31	67	3.9	Very low	1
29	3.9	Very low	2	68	7.4	Low	3
30	3.9	Very low	2	69	3.9	Very low	3

was 23.3%; 91 cases, or 35.8% came from average areas, where the mean rate was 14.7%; 25 cases, or 9.8%, came from areas of low rates, where the mean rate was 6.7%; and 88, or 34.6%, of all cases came from areas of lowest rates, the mean rate for these combined areas being 3.9%.

SUMMARY OF NEEDS AND CONTRIBUTORY BACKGROUNDS

The children who were the subjects of this study came from a number of different nationalities, although one-third of them were of Mediterranean stock. Almost all were of the Caucasian race, although there were also a few of Indian ancestry and of gypsy tribes. In family socio-economic status the group was substandard in amount of income and rental, and quality of housing conditions, according to minimal norms of levels and standards. Cultural patterns in the home and community were definitely inferior, ranking as "low" on the basis of objective ratings made at the beginning of the study. In addition to these material lacks, the great majority of the homes were badly riddled by internal emotional conflicts as well. Approximately 60% of all families were active cases at various social agencies at the beginning of the study. Almost half of all subject families were either fully or partially dependent on public welfare for support, while a large percentage were receiving physical or mental clinic treatment or hospitalization at public expense.

The children came from similar school backgrounds, although they were referred from 46 schools. All but the 8 who had previously been excluded from school because of low mentality had been in attendance for at least 6 years, for all were between the ages of 12 and 14 years at time of referral. They represented all grade levels, because schools differed in their promotional practices, some requiring arbitrary achievement at or exceeding a grade level, while others adopted a plan of automatic promotion regardless of achievement. According to actual educational achievement they were educationally retarded an average of 5.1 grades. However, they had all been classified as feebleminded on the basis of clinical intelligence tests, and, according to mental age grade expectancy, they were not retarded. As a group, they were in low average general health and handicapped by physical defects.

The community areas contributing to the group included all economic levels from the very lowest to the very highest. The total contributing district was 64 square miles in extent, and included almost 80% of the individual areas which made up the metropolis. Those districts which contributed the largest number of cases were also the most densely populated and the lowest in economic level. The median size of family in those areas was well above the city median. Despite substandard family and community background, although there were some severe behavior problems reported and on record in the group, most of the children were not classified as "socially maladjusted" according to criteria of overt behavior.

The analyses of the academic achievement and behavior patterns of the children in this study showed their needs at special center entrance to be: (1) improvement in all the tool subjects, as well as in the informational subject-matter areas; (2) growth in emancipation and responsibility in personal behavior; (3) increased understanding of group relationships in the family, in school, and the community; (4) in-

creased competency in the skills of social interaction; and (5) ability to use direct response mechanisms in resolving conflict situations in the adjustment process. These were their predicated needs, or their deficiencies of achievement and behavior in comparison with a pattern assumed as the more desirable.

The study of contributory environmental backgrounds indicated some of their important psycho-biological needs to be: (1) economic security; (2) social recognition; (3) belongingness, or acceptance by the group; and (4) feeling of personal worth as a contributing member of a social group.

These were the personal, social, and academic needs of the group in this study at enrollment. Upon the basis of these needs the educational program was planned.

Chapter IV

The Educational Program

The purpose of the development of the experimental educational program was to provide school experiences which would help meet the needs of the participating boys and girls while in school, and prepare them for competent social adjustment in post-school years. To achieve these two broad general aims, the instructional program of the 3 experimental centers was directed toward these specific goals: (1) development of desirable personal behavior; (2) improvement of fundamental academic skills; (3) development of the manipulative arts; (4) improvement of work and study habits; (5) learning of occupational and related vocational information; and (6) pre-employment experience.

SPECIFIC OBJECTIVES

Desirable personal behavior. Improvement in personal behavior was planned to work towards increased self-directed activity, greater responsibility for personal behavior, expansion and intensification of interests, and the practice of the fundamentals of personal hygiene. Children were taught the basic elements of neat and attractive dress, care of the hair, and general grooming, in order to achieve improvement in personal appearance. The selection and preparation of adequate diet, and the need for rest, recreation, and relaxation were emphasized. In addition, the arts were used for personal development through the overcoming of fears, the opportunity for emotional release, and the stimulation of creative expression.

They were given opportunities to serve in positions of usefulness to other teachers and to school and community groups, and these responsibilities helped meet three of the needs most evident from the analysis presented earlier: the need for belongingness, the need for social recognition, and the need for a feeling of personal worth as a contributing member of a social group.

Improvement in academic skills. The second objective, the improvement of fundamental skills, was based on the assumption that certain minimal standards were desirable and achievable by special class pupils. This assumption is in agreement with Whipple (45: 80-81) who states that such skills are necessary for all children who are expected to "go about at liberty" after leaving school, i.e., the non-institutionalized. Featherstone (23: 71) comments that "every pupil, slow learner or rapid learner, must learn to read, write, spell, compute and solve problems, and speak the mother tongue with reasonable grace and fluency," for "without these there is little communication, and without communication there is little learning." Ingram (24: 46) states that the majority of mentally handicapped school children can master enough of the tool subjects for practical use in daily living, although the mastery may be slow and difficult of achievement.

The specific skills in the tool subjects which were emphasized were: (1) the reading of signs, labels and notices, and the interpreting of continuous paragraph reading at a fourth grade level, as measured by standardized tests; (2) legible writing, but not necessarily conformity with any special handwriting scale; (3) the spelling of words in or-

dinary daily usage, and a general spelling vocabulary approximately equivalent to fifth grade norms on a standardized spelling scale; (4) addition and subtraction of four column figures, multiplication and division by three digits; the use of halves, eighths, and sixteenths in practical usage; use of decimals for money computations; and the use of percentage in discounts and interest. Some of the functional arithmetic abilities which it was planned to develop were: problems of buying for the home; selling over the department and food store counter; simple linear, dry, and liquid measurements in problems in the home, such as repairs and simple carpentering and sewing; use of measurements in cooking and quantity marketing; and simple family budgeting.

Manipulative arts. The third goal was was the development of hand skills. Here again a selective process must first determine essential skills. These include: (1) the ability to use simple tools, such as hammer, screw-driver, wrench, plane, and saw in simple construction and repair work; (2) making simple electric repairs, replacing fuses, mending broken wires, and repairing plugs; (3) simple dressmaking and plain sewing for the girls, and mending and repair of clothing for both boys and girls; (4) ability to use ordinary cooking equipment and to care for it efficiently; (5) the use of common household appliances, such as washing machines, mangles, and vacuum cleaners; (6) using hands and fingers for manual work requiring some dexterity; and (7) using hands for active leisure time pursuits in arts or crafts for personal values.

Many of these hand skills were developed in project work in correlated learning units; others, particularly the crafts, were learned in special shop periods or club hours. The fashioning of novel belts, necklaces, purses, and hats provides training and pleasure in achievement for the girls. The construction of usable, attractive articles for the home adds to the boys' satisfaction. While furnishing necesary training in the use of small muscles, these activities produce equally important gains in personal values, in establishing the child's confidence in his own worth.

Improvement of work and study habits. Among the study habits which were emphasized were: (1) the definition of the problem to be solved, i.e., the specific nature of the job or the assignment; (2) systematic time schedules and programs for independent, or self-initiated work; (3) organization of necessary materials and equipment; (4) selection of location suitable to the job.

Work habits of accuracy, ability to follow directions and accept criticism were stressed in clubs or shop hours devoted to crafts; ability for self-direction, co-operation, and industry were developed in larger group participation as in the "job-study program" in which job situations were reproduced in the classroom. Promptness, honesty, and dependability were stressed in all activities in the program.

With the feebleminded child much of this habit development must be overt and specific. He must have his attention called to occasions in work where he has been either careful or careless; more than that, the teacher and pupil must analyze a job in advance so that the pupil clearly understands at least some of the specific phases of the work which require particular care. The same techniques must be employed for other work habits. In reproducing the job-situations in the classroom learning was directed so that desirable work habits were con-

sciously striven for by the pupils and fundamental work habits were emphasized by visiting employers and personnel workers. "On-the-job" films were shown; and industrial plants were studied as a whole, showing the part played by each employee, and the nature of employer-employee relationships.

Occupational information. The child of low mentality seeks his first job fairly close to home. If small shops are in the neighborhood, he will rely on them; otherwise he will venture to the nearest small business section. If it is too far away, he may remain at home and do nothing. In beginning the occupations course for the special class, an overview was presented of occupations in the neighborhood suited to the needs and abilities of the pupils. This was expanded until it included a bird's-eye view of suitable occupations in the entire city.

Unlike occupations courses designed for the more able youth, which present large vocational areas for study, the course for the mentally handicapped must be concerned with specific jobs, but jobs which are common to many occupational areas. Some of the jobs these youngsters enter are: (1) messenger service in stores, business houses, and, in some cases, banks; (2) department and small store clerks; (3) routine, light office work; (4) packers in factory shipping departments; (5) machine operators in factories; (6) waitresses, cooks, and dishwashers in small lunchrooms; (7) shoe repair departments; (8) truck driving and delivery service; (9) domestic service; (10) commercial laundry service; and (11) telephone service.

Occupational information was presented through trips to offices, warehouses, factories, and restaurants under guide service, with special reference to employment problems. In addition, many firms sent men from their personnel and employment offices to discuss occupational problems in the school.

After the general survey was made attention concentrated on one large occupational area at a time, and a detailed study was made of the whole area, emphasizing the specific jobs within it, and their relation to the whole area.

Work experience and vocational guidance. The mentally handicapped need help in finding jobs, in those skills which help them to get the job, to keep it, and to perform their duties of employment as well as citizenship in an acceptable manner. They need training in the use of want ads; they must learn how to conduct themselves in an interview; they must learn how to use the employment bureaus, both the United States Service, and the legitimate private agencies. The employment offices sent workers to the schools and encouraged pupils to visit their offices. The boys and girls became acquainted with application forms and other techniques of job seeking. Reproduction of an employment agency in the classroom and actual practice in using it helped to increase the pupils' understanding of the services of the bureau.

Social security legislation, with some familiarity with wage-hour laws, unemployment compensation, and social security taxes and benefits, was included in the program of related vocational training.

Health and safety education were also stressed. This field included personal health as well as special health problems pertinent to particular jobs, and particular physical requirements of those jobs. Safety education stressed industrial safety and workmen's compensation benefits as well as safety in the home and community.

Closely associated with the guidance program is placement, either for part-time jobs while in school, or full-time placement after leaving school. In the case of the mentally handicapped child, although he should know how to use the various methods of looking for work, it must be remembered that he has little to offer in training, in formal education, and in experience. Capacities of public employment agencies are taxed by older, experienced, and trained persons. While the public agencies frequently do place these children, it was considered to be the function of the special center to add its placement services to those of the bureau. The special center knew each child individually, his needs, capacities, and limitations, and used that knowledge to find the best possible job for him.

The cooperation of employers was secured through the PTA, the school newspaper, or by personal contact with employers and community civic groups. In placing the mentally handicapped, the special centers were in closer touch with the employer, and follow-up contacts were also established to insure successful occupational adjustment.

These were the intermediary goals of the program of the special centers, from which it was assumed would proceed the general objectives of academic, personal, and social competency. The degree to which these objectives were attained was determined by the amount and quality of achievement in each of these areas in the follow-up period by the pupils who participated in the program.

PROBLEMS OF ADMINISTRATION

The special centers were housed in regular elementary school buildings, where, in all matters pertaining to routines of dismissal, lunch-hours, recess periods, or other details involving the use of the building, they were under the administration of the elementary school principal. However, in all instructional matters and problems concerning the physical equipment or housing of the special centers themselves, administration and supervision were the responsibility of the "head teacher." Ultimate supervision was by the assistant superintendent in charge of special schools and classes in the city school system.

The school day of the centers was five hours long, from 9 o'clock in the morning to 12, and from 1 in the afternoon until 3. This was the same time schedule in operation for the regular elementary graded school. The special center, however, did not have a recess period at the same time as the rest of the building; but instead, a daily half-hour play period was programmed at mid-morning, outdoors in fair weather, otherwise in the playrooms. The special center observed a five-day school week, and a ten-month school term, as did the entire school system of the city.

The home economics department of the special centers was responsible for the maintenance of a lunchroom for the pupils, where the noon-day meal was provided and served by the members of the cooking classes in the center, in turn, at no cost to the pupils themselves. The lunch hour was supervised by one of the teachers in the center, since no other teachers or children were in the building during that hour.[23]

Transportation fares were paid by the Board of Education for children enrolled in the center, who lived outside the city area which was the district for

[23] The children in the regular grades lived in the immediate school district and consequently no provision was made for school lunches for them.

the elementary school in the building of which the center was located. However, no common vehicle was provided, and boys and girls were required to learn to use the public transportation services of the city in getting to and from school. Because the centers refused to permit parents to accompany children or call for them after their second day of enrollment, the very factor of travel distance to school was utilized to advantage in motivating the learning of simple reading of street signs; transit signs on street cars, buses, and elevated trains; and the reading of simple directions provided for them as aids in their first days of independent travel. This simple transfer of responsibility for school attendance from the parents to the children themselves was also the first step in developing self-responsibility and emancipation from home and family domination of behavior.

Books, supplies, and equipment were furnished for use without charge to pupils or parents. The only exception was in the case of materials for the sewing classes, where girls learned dressmaking, and frequently purchased materials for special articles of clothing which they desired to make. Some sewing material was provided gratis, but individual pupil desires beyond this allotment were purchased by the girls themselves. A small contingency fund, collected from candy and cookie sales, ticket sales for plays produced by the center, and other special activities, provided monies for the payment of small fees to the pupils wishing to earn enough for special materials or other supplies which they wished in addition to those supplied by the center.

The number of teachers in each center was dependent on the enrollment of that center. The ratio of teachers to pupils that was considered desirable was 1 to 20, but in practice the ratio approximated 1 to 28 for Centers A and B and 1 to 19 in Center C.

Each teacher was responsible for the administrative duties of a home room (of 28 pupils in Centers A and B, and of 19 in Center C). She kept attendance records of these children; distributed carfare funds; and kept pupil registration cards and other records accurately completed. The head teacher arranged for the transfer of the new child to the special center; interviewed parents, teachers, and social workers who had a concern about the transfer; administered achievement tests to new pupils; and placed children in home room groups, according to achievement and ability.

One teacher in each center was a shop teacher, and was primarily consulted for work in crafts for both boys and girls. A second teacher was in charge of music and health activities; in Centers A and B, where two teachers were available for these areas, one worked in music and rhythms only while the other was in charge of play, recreation, and health. The head teacher was responsible for academic teaching, correlative handwork and graphic art, for occupational information service, and for vocational guidance.

The school day was divided into three major time blocks: block 1, from 9 o'clock in the morning until 10:30; block 2, from 11 to 12; and block 3, from 1 to 2:30. The half hour from 10:30 to 11 was a play period; 12 to 1 was the noon lunch hour; and 2:30 to 3 was a home-room period. These blocks were organized to facilitate grouping for pupil activities. While one group worked with music and rhythms, another was occupied with academic or vo-

cational work, and still another was at work in the shop. However, no inflexible time program functioned in practice, since it was frequently desirable to break down existing groups when special needs of smaller groups or individuals made it desirable. On the other hand, there were times when it was necessary to bring 2 or more groups together, as for glee club practice, for the showing of films, for hearing special speakers, or for the presentation of plays or other demonstrations by one group for the others.

CURRICULUM DEVELOPMENT

Ingram (24: 73) proposes six criteria for the selection of educational activities for the slow-learning child: (1) promotion of physical and mental health; (2) practical application of the tool subjects; (3) promotion of better home membership; (4) promotion of better group and community living; (5) improvement in the use of leisure time; (6) development of desirable work and study habits. Featherstone proposes the same criteria, but includes vocational education as well. He further emphasizes the need for selecting content from the daily experiences of the children both in and out of school. (23: 36-58)

Whipple points out that the special class curriculum should be determined by its usefulness, meet a present need of the pupils, appeal to his interest, be drawn from his immediate environment and experiences, be presented as closely integrated units, rather than as isolated blocks of information, and should embrace the development of habits and attitudes as well as the acquisition of information. (45: 8-12)

The curriculum of the special centers in this study was based on the following assumptions: (1) competency in human relationships is increased by freedom from nervous tension and by the development of feelings of self-confidence and personal worth; (2) personal and social behavior, and social adjustment in the home and community, are facilitated by practice in the skills of social interaction; (3) acceptable social adjustment in adult living is predicated in part, at least, on economic self-sufficiency and competency in human relationships; (4) economic self-sufficiency requires a degree of skill in personal and group relationships, in addition to vocational competency.

The experiences upon which focal attention was centered were selected by these criteria: (1) immediacy in pupils' experiences; (2) opportunities for participation on a wide range of levels of mental, physical, and emotional maturity; (3) opportunities for development of desirable personal traits, habits, and attitudes; (4) emphasis on social interaction; (5) inherent need for educational and vocational skills. Units built around home life emphasized such social concepts as family relationships and their significance, the responsibilities and privileges of the home, healthful family living, and the use of simple mechanical devices, like the doorbell, the telephone, and the vacuum cleaner. As activities advanced to more complex stages, consideration was given to family income budgeting, requirement for good housing, the care of children, and such household skills as cooking, housecleaning, mechanical and electrical repair, plain sewing, remodeling clothing, and mending. Other units broadened ideas of group relationships, and emphasized such social concepts as the authority of accepted leadership.

Some of the specific units were developed around such social studies con-

tent as the use of city transportation and communication systems; occupational surveys of work possibilities in the city; and "job-study" units, in which a particular job, or an occupational area, was studied. In addition, some units were planned concerned primarily with the development of principles of Americanism and democracy; the rights, privileges and responsibilities of good citizenship and the interpretation of current legislation.

Activities concerned with personal physical and mental health were included in units whose central content was social studies. In addition, some specific units were planned for the developing of particular understandings by the boys and girls of their own behavior problems and how to improve them.

Special holidays and festivals were the immediate motivation for much of the creative production of plays, posters, greeting cards, and musical numbers, although similar pupil contributions proceeded from content units.

GENERAL INSTRUCTIONAL METHOD

Instructional method used in the educational program can be characterized best by the following major emphases: (1) group planning; (2) group experiences; (3) in-school reproduction of situational experiences; and (4) the use of the creative and manipulative arts. Group planning began with preliminary consideration of the unit to be selected. The pupils met with the classroom teachers and the head teacher for consideration of the most significant problems upon which they needed help. Thus, units of work were first requested by individual pupils, then considered by the group, and accepted or rejected according to the total interest in the problems suggested. In order to merit presentation of his desires to the group, each individual was required to be able to state at least three reasons why he selected the particular topic. Beyond this stipulation, no restrictions were placed on suggestions.

Group consideration was given first in the total group meeting, and then in meetings of smaller groups throughout the following week. By the end of that period the group came together, under the direction of the head teacher, to make a selection from the topics previously suggested.

The following week was devoted to small and large group planning, in which the children presented the questions or problems they considered important in working out the unit. They also suggested some of the activities they wished to undertake. By the end of the second week, it was the responsibility of the head teacher to bring together all teachers and pupils to discuss the plan of the unit which she had worked out from their suggestions. Following this meeting, with the inclusion of their revisions and additions, the unit was ready for use, although it was at no time considered an arbitrary blue-print, but rather as a guide or outline to be modified as and if advisable.

A great part of the initial two-week period devoted to the selection of the unit was spent in general discussion and oral exploration of the problem. In addition, some use of books and pictures was included in an attempt to determine the specific questions that were included and the extent of the problem. The introductory learning period was an extension of this two-week selection period. It was a time for general learning on many phases of the large topic which was to be explored.

The teacher made available to the children all materials which would contribute to this learning period. She set aside special selections of books which were particularly interesting and helpful. These were brought to the attention of the children either in discussions or through the bulletin boards. During this period, too, she set up displays of pictures, diagrams, leaflets, clippings, and pamphlets. Slides, moving picture films, and stereoscopics, selected and shown by the teacher aided in crystallizing the information already acquired. The final event of the introductory period was the first field trip. By this time the class had sufficient understanding of the problem in hand to profit by the discussion and factual organization which preceded the actual excursion.

Following the first trip, motor activities expanded, and reproduction and dramatization began, with an increasing variety of individual, small and large group projects, initiated and completed by the pupils and all integrated with the central problem of the learning unit. This was the primary learning period, in which the acquisition of the skills related to the problem became imperative and compelling. Especially in the activities developed around dramatization and reproduction, the pupils became increasingly conscious of their inadequacy in these skills, for these inabilities hampered the completion of the project they had undertaken.

The third, and final, period of the program was rich with academic and motor activities which summarized the growth or development which had been achieved, both individually and as a group. This period of the program was most valuable for the organization and classification of new concepts which grew out of the study. The activities during this period differed from those of earlier learning periods, in that they showed a clearer definition, a greater completeness, and a wider comprehension of the problem, the development of which was their original objective.

Chapter V

Activities and Adjustment of Children During Special Center Attendance

The educational program was planned to meet the needs of the children while they were in school, and to prepare them for social and vocational competency in their post-school years. The evaluation of the program in accomplishing the first of these objectives was based upon the academic achievement and adjustment of the boys and girls during their period of special center attendance, as shown by the activities in which they participated, by their performance on standardized tests, and by objective measures of their personal and social adjustment.

During the period of special center attendance, some changes occurred in the family and community backgrounds of the pupils in the study. A descriptive summary of these changes will be presented in this chapter, following the account of the activities and adjustments of the children, so that pupil achievements may be interpreted in relation to the contributions of the home environment to their changing needs.

Experiential Activities

Personal and social adjustment. During the period of special center attendance both boys and girls learned to choose their clothes with respect to size, color, and style, and to keep them clean and in repair. The girls learned to make and alter their own clothing, and, in many cases, they also learned the fundamentals of dress and millinery design. All pupils learned habits of good grooming, and emphasis was placed on the importance of pleasing personal appearance and common courtesy in meeting and working with others. By the close of the in-school period, 210 pupils, or 82%, assumed full responsibility for their dress and grooming, as compared with 7, or less than 3%, who had done so at special center enrollment.

Another index of adjustment was found in the ability to use their leisure time well, and in the expanding variety of interests and hobbies which they followed in their spare time out of school. At the close of the in-school period, the boys listed various active sports as their favorite interests, while the girls listed dances as their first choice. Among the activities participated in actively by the pupils were scouting, playing musical instruments, singing, acrobatic and tap dancing, reading, attending concerts, and listening to the radio. Their interests emphasized participation rather than spectator activities. Many of the children were members of hobby clubs or neighborhood groups composed of others interested in the same pursuits. At the close of the in-school period, several were taking special lessons in singing, dancing, piano, or violin, and two boys had merited special scholarships in the Saturday classes at the Art Institute.

The expansion of their reading interest was evidenced by the increased amount of their reading, and also by the change in their book selections. Shortly after their enrollment, an inventory of their favorite "books" included the following as the 10 most popular: *Dick Tracy* (comic book); *Lone Ranger* (comic book); *In Quest of Treasure; Tarzan* (comic book); *Flyin' High* (comic book); *Snow White and the Seven Dwarfs;*

Heidi; Jimmy Allen, Secret Operative (comic book); *Janet Hardy in Hollywood;* and *Happy Days.* At the close of their special center attendance, they listed as their favorite fiction, in order of preference: (1) *Little Women* (Alcott); (2) *The Pool of Stars* (Meigs); (3) *Tom Sawyer* (Clemens); (4) *Heidi* (Spyri); (5) *The Prince and the Pauper* (Clemens); (6) *Under the Lilacs* (Alcott); (7) *Little Men* (Alcott); (8) *Dr. Doolittle Series* (Lofting); (9) *Rebecca of Sunnybrook Farm* (Wiggin); (10) *Anne of Green Gables* (Montgomery); (11) *Little Colonel Series* (Johnston); (12) *The Wonderful Adventures of Nils* (Lagerlof); (13) *Pinocchio* (Lorenzo). In addition, they were reading such non-fiction as *Invincible Louisa* (Meigs); *Star of India* (Harris); *Children of the Fiery Mountain* (Cannon); *Mexico* (Castillo); *The Way of Democracy* (King); and *Where Our Ways of Living Come From* (Wilson).

Shortly after special center entrance an inspection of their reading selections showed the 10 major reading interests to be fairy tales, growing up, adventures, health, heroes of long ago, ways of living in other countries, farm life, animals and pets, and toys. By the end of their period of special center attendance, an analysis of their voluntary book withdrawals from the library of the special center showed their interests had changed to books and authors, growing up, animals and pets, fairy tales, adventures, everyday science, ways of living in other countries, health, biography, machinery.

For a group who began with an actual dislike for reading, the very act of extensive reading was indicative of achievement. The median number of full books read by this group was 1 book per pupil in a 10 week period at the time of enrollment. At the close of the in-school period the median had risen to 9 books per pupil. The amount of their reading was found to compare very favorably with those of mentally gifted children as found by Terman and Lima, who reported a median of 8 books for 13 and 14 year olds, and 6 for 15 and 16 year olds, in their study of children from well-to-do communities with better than average cultural opportunities. Likewise, in their reading interest, they followed closely in reports of both Terman and Lima, (44:40-43) and the Center and Persons study of high school students, (3) with the exception that the girls among these pupils read widely in history, science and machinery, and biography, which interests were found to be absent from the average adolescent girls' reading preference.

Eight of the books selected by these pupils as their favorites were also among the favorites of average and gifted children in the Terman and Lima study; two of these were also listed as favorites in the Center and Persons study; and two were Newberry Medal Books.[24] They chose for their reading books of literary merit, and included in their reading diet non-fiction as well as fiction.

A third indication of personal adjustment was increased facility of free expression, in both the manipulative and the language arts. Children turned naturally to drawing and modelling as well as needlework and crafts for spare-time moments; they found pleasure in the creation of simple original design, and in the good workmanship of the production of useful articles for personal use or for the home. In addition, their free expression in the language arts showed

[24] Hugh Lofting, *The Voyages of Doctor Doolittle,* award in 1923; Cornelia Meigs, *Invincible Louisa,* award in 1934.

growing effectiveness in the skills of social communication, as well as in vivid imagery and presentation.

In social behavior in group activities within the special centers, these pupils who originally came from 46 different schools, and represented many socio-economic and personal differences, learned to work together to organize their own self-government council, called the Civics Club, and to establish and maintain a Home Economics Club which assumed responsibility for the planning and management of the cooked noonday meal provided for the pupils. Separate divisions within these centers managed their own transportation accounts and separate social affairs, but all divisions co-operated in the Civics and Home Economics Clubs, and the Choir. Likewise, the centers acted as units when they presented plays, musical programs, or special demonstrations for other special centers, for elementary school, or for the adult public.

None of the boys and girls in the study held court records during the period of special center attendance, nor were they considered as "behavior problems" by the instructional staff of the centers. In addition, some indication of improved social adjustment was obtained from an analysis of the practice of certain activities which were considered to be evidences of desirable qualities in adolescent behavior.[25] In an earlier chapter[26] these desirable qualities were listed as: (1) emancipation from home and family; (2) self-responsibility; (3) mature heterosexuality; and (4) social maturation. At entrance, the frequency of practice of selected activities considered to be indicative of these qualities was recorded, as an index of personal adjustment at special center enrollment. At the close of the first 18 months of attendance in the special centers, a similar tabulation was prepared, based upon information secured from interviews with parents, and observed behavior in school activities. Three years after enrollment, at time of withdrawal from the special centers, a third tabulation was prepared from the data secured from the same sources. These three tabulations are presented in Table 26.

TABLE 26

Frequency of independence exercised by pupils in certain activities assumed to be indicative of emancipation from home and family, at entrance (F_1), and at second and third evaluation periods (F_2 and F_3)

Activity	F_1[27]	F_2	F_3
Use of city transportation	11	254	254
Freedom from parental attendants	11	243	254
Freedom to make minor decisions	36	87	254
Choice of friends	24	196	254
Independence in personal care	82	159	237
Use of personal allowance	0	163	221
Use of leisure time	0	31	184
Choice of clothes and style	2	57	168
Independence of income	0	26	49

From Table 26 it can be seen that all pupils were using city transportation in-

[25] For the criteria for the selection of these activities, see Chapter III, p. 24.

[26] Chapter III.

[27] The frequencies entered in the F_1 column are those reported earlier, in Chapter III. They are repeated in this table for ready comparison with the frequencies in the F_2 and F_3 columns.

TABLE 27

Frequency of practice of certain activities considered to be indicative of self-responsibility at entrance (F_1) and at second and third evaluation intervals (F_2 and F_3)

Activity	F_1	F_2	F_3
Management of personal transportation fares	11	254	254
Care of personal appearance	7	82	210
Service positions	0	26	114
Regularity of school attendance	3	59	202
Part-time employment	0	43	87
Management of part-time earnings	0	25	75
Positions of leadership in school and community	0	38	51

dependently by the close of special center attendance. Likewise, all exercised freedom in their choice of friends, and most were earning a personal allowance which they managed independently. In addition, about one-sixth of the group had a regular independent source of income, although none were so reported at entrance. Likewise, increased exercise of other kinds of self-responsibility was shown by the increased practice of activities as detailed in Table 27.

Service positions to which pupils were appointed ranged in complexity from assistant in the elementary school lunchrooms to guides for blind pupils. Some required academic or vocational skills; all required habits of reliability, accuracy, and industry. The variety of positions so held during the in-school period, and the number of students appointed to them, are given in Table 28.

Another activity, detailed in Table 29, as an index of self-responsibility was the part-time employment held by pupils while in attendance at the special center. Most of these jobs were in the unskilled occupations, and as general helpers, but some few were as beginners in semi-skilled fields. In Table 29 are found the kinds of part-time jobs held by the 87 pupils who were employed while attending school.

The median duration of these part-time jobs was 2 years and 3 months. Weekly earnings ranged from $1.50 to $12, with an average wage of $6.35. Those girls employed in domestic service in most cases did light cleaning and took care of children, although one girl was in charge of a home as a full housekeeper. The nursery attendants were boys employed in packing shrubs, plants, and seeds for shipping, and in setting

TABLE 28

Number and kinds of service positions held by one hundred twenty children while in special center attendance

Service Position	Number
Clerical workers in campaigns and drives	63
Office girls and boys	46
District office telephone girls	37
Guides for the blind	28
Patrol boys	23
District office girls	18
Lunchroom assistants	16
Primary grade guides	15
Mimeograph operators	11
District office boys	9
Chairmen of special campaigns	8

TABLE 29

Number and kinds of part-time employment held by eighty-seven children

Position	Number
Service station attendants	28
Domestic service	19
Department store clerks	12
Typists	9
File clerks	8
Drug store clerks	8
Nursery assistants	3

out plants in hotbeds. All positions were obtained by the students themselves, although the special centers encouraged part-time work when it was not deterimental to general child welfare, and often was contacted by persons in need of such work as could be done by these pupils.

In addition to recorded evidence of growth in freedom from parental restrictions and in growth in self-responsibility, the increased ability to perform co-operative duties in the social group was taken as evidence of growing social maturation.

TABLE 30

Frequency of practice of certain activities considered to be evidence of level of social maturation, at entrance (F_1) and at second and third evaluation periods (F_2 and F_3)

Activities	F_1	F_2	F_3
Helps in chores at home	45	219	254
Enjoys leisure reading	0	107	228
Uses mail communication	31	216	220
Uses telephone communication	47	163	201
Budgets earnings or allowance	0	125	175
Does simple creative work	3	129	152
Earns allowance, or has part-time job	0	68	117

The tabulation of the numbers of children who practiced selected social activities at entrance, and at each of the first two evaluation intervals, is given in Table 30.

Telephone communication was facilitated by the training in the use of the telephone itself, and also by the development of friendships between boys and girls attending the same special center, but living some distance from each other. This situation differed in social need for telephone usage from that in which school acquaintances were few, and these few were limited to a specific concentrated schools district. Main communication was necessitated by the need for arrangements for excursions, exhibits, and special guest speakers for various center activities, and the increased eventfulness of their experiences stimulated personal correspondence with friends and relatives, as well. Increased assumption of home responsibilities was due in part to the teaching of the simple homemaking duties and home-mechanics repair units. In general, improvement in the mastery of skills involved in the given social activities facilitated improvement in social maturation, as well as did the increase in their desire to achieve social competency.

At the entrance, behavior patterns of the children were analyzed to determine the mechanisms most frequently used in meeting conflict situations. This analysis was repeated at the second and third evaluation interval; the source of the data for each tabulation was the careful observation of the behavior of each child during the two weeks immediately preceding the close of the evaluation interval. The tabulation of these mechanisms is presented in Table 31.

TABLE 31

Mechanisms used most frequently by children in meeting conflict situations, as recorded from observed in-school behavior

Mechanism	F_1	F_2	F_3
Direct response	23	153	223
Compensation	44	32	16
Negativism	28	39	7
Timidity	41	12	5
Fears	86	16	3
Projection of blame	15	0	0
Phantasy	17	2	0

The above table shows the progressive elimination of substitute mechanisms in meeting conflict situations as the children neared the close of special center attendance. The majority were characterized as direct responses rather than indi-

rect, by the end of the in-school period, although some still remained who resorted to compensations, and others who were fearful, timid, or negativistic.

Academic achievement. Another measure of evaluation of the educational program can be gained from an account of the educational achievements of the pupils by the close of the period of special center attendance. During the in-school period, 83 of the girls completed a course in "Home Nursing and Care of the Sick" and were awarded their American Red Cross Certificates of proficiency with their academic certificates at their graduation exercises. Twenty-three pupils received gold pins at commencement in recognition of perfect school attendance, except for periods of serious illness excused by the attending physician.

In the certification of pupils at graduation, Centers A and B awarded special center certificates, and, where desired, made provision for their transfer to advanced vocational training units, or to the regular elementary eighth grade, from either of which transfer placement they could receive the elementary diploma, when merited. Special center certificates were awarded on the basis of the efficiency of learning of the individual, in relation to his capacity, and thus held no constant standard of real achievement level; the centers were not empowered to award elementary diplomas. However, because many did complete their special center attendance with achievement levels comparable and sometimes in excess of eighth-grade graduates, special center commencement exercises were held three weeks in advance of those of the elementary grades, and it was thus possible for those meriting eighth-grade diplomas first to receive their special center certificate, then transfer to an elementary school immediately, and be awarded an elementary diploma at their current graduation.

Center C did not award special certificates, because the elementary building in which it was housed included only the first 6 grades, and it was, therefore, customary to transfer children to the upper elementay grades from the special centers without benefit of a special graduation ceremony. This paralleled the practice in the regular grades of the same school building, where such transfers were made semi-annually.

At the close of the period of special center attendance, 79 transferred directly (and voluntarily) to the upper elementary grades, either to complete necessary requirements for the earning of their regular eighth-grade diploma, or to graduate with the current class. One hundred and twenty-six were awarded special center certificates, of which group some transferred to the elementary grades, some to advanced vocational units, from either of which eighth grade graduation was the goal; and some discontinued formal education, either temporarily or permanently, and went to seek full-time employment. Seventy-nine were not awarded certificates, at the close of their special center attendance, either because their educational achievement was markedly below their ability, or because they were withdrawn from school unofficially at the time of the presentation of certificates.

In addition to the award of certificates, another indication of educational gains during the in-school period is shown by a comparison of the mean achievement in the skill subjects of reading and arithmetic, and in composite achievement, at the close of special cen-

ter placement, as compared with achievement at entrance. At entrance, individual achievement in reading ranged from 1.2 to 1.9. By the close of special center attendance, reading achievement levels ranged from 1.9 to 12.9. At time of enrollment, individual arithmetic levels ranged from 1.3 to 2.7; but individual final levels ranged from 2.4 to 10.9. During this 3-year period, group changes in reading ranged from 2.4 to 4.7 years, and in composite achievement from 3.6 to 4.7 years. Original and final composite achievement was 3 years and 8 months, or a rate of gain of 120 also.

STANDARDIZED MEASURES OF CHANGE IN PERSONAL, SOCIAL, AND INTELLECTUAL BEHAVIOR

An additional measure of evaluation of the experimental educational program was the change in personal, social, and intellectual behavior according to standardized scales and inventories. These measures were given at entrance and were retaken at the end of the first

TABLE 32

Initial and final mean achievement in reading, arithmetic, and composite achievement during the in-school period as measured by Stanford achievement tests, forms V and W, at special center entrance and withdrawal

Group	Reading			Arithmetic			Composite		
	Initial	Final	Gain	Initial	Final	Gain	Initial	Final	Gain
I: Boys	1.5	4.9	3.4	2.1	4.8	2.7	1.8	4.9	3.1
I: Girls	1.7	6.4	4.7	1.6	5.8	4.8	1.4	6.1	4.7
I: Total	1.6	5.4	3.8	1.7	5.1	3.4	1.6	5.3	3.7
II: Total	1.5	6.0	4.5	1.3	4.6	3.6	1.3	5.3	4.0
III: Boys	1.8	5.1	3.3	2.2	4.1	1.9	2.0	4.6	2.6
III: Girls	1.8	4.2	2.4	1.3	4.8	3.5	1.6	4.5	2.9
III: Total	1.8	4.8	3.0	1.8	4.4	2.6	1.8	4.6	2.8
Total	1.4	5.5	4.1	1.3	4.9	3.6	1.4	5.2	3.8

mean grade levels for reading and arithmetic, and for composite achievement, are shown in Table 32.

From the above table it can be seen that the average pupil, at withdrawal, was reading at a level equivalent to that of children in the last half of fifth grade; was at a grade level in arithmetic equivalent to beginning fifth grade; and scored a composite achievement level comparable to that of the child in the first few months of fifth grade. The average gain in reading achievement for the total group was 4 years and 1 month in 3 years of special center attendance, a rate of gain of 136. Average gain in arithmetic achievement was 3 years and 7 months, a rate of gain of 120, and average gain in interval, 18 months later; and at the end of the second interval, which was 18 months after the first retest, or 3 years after the initial tests. The close of the second retest marked the close of the period of special center attendance as well.

Personal adjustment was measured by the Pintner, Willoughby, and Bernreuter scales, and social adjustment by the Vineland and Detroit inventories. However, it has been pointed out earlier, in the description of the techniques employed in this study, that the validity of these objective measures of personality, behavior, and adjustment have been seriously challenged, and that they were to be used in this study only in addition

to other kinds of information indicative of the degree of adjustment and social competency attained by the pupils in these special centers. Therefore, while simple statistical measures derived from the results of these scales have been included, they are to be interpreted within the limitations of their fallibility. For the same reasons, no detailed statistical analysis of score results will be made.

ranks indicates the particularly high degree of neuroticism originally present in the girls of Group I and the boys in Group III. Following the change in this former group, a marked reduction in the tendencies measured is indicated by the drop to the mean percentile of 24 of the second test (F_2). From the most neurotic group studied, these girls ranked least neurotic at the end of the first 18

TABLE 33

Means, sigmas, and corresponding national percentiles of Bernreuter B1N scores at each retest interval

Group	F_1			F_2			F_3		
	Mean	Sigma	Percentile	Mean	Sigma	Percentile	Mean	Sigma	Percentile
I: Boys	−12.4	76.0	71	−48.0	64.0	59	−61.2	60.0	50
I: Girls	108.0	100.0	94	−84.0	96	24	122.8	68.0	7
I: Total	32.0	104.0	73	−60.4	76	36	−83.6	68.0	24
II: Girls	76.0	23.6	85	49.2	32.0	80	33.2	38.0	72
III: Boys	56.0	52.0	93	16.0	40.0	82	− 6.4	38.0	74
III: Girls	48.0	44.0	79	20.0	38.0	69	16.0	32.4	67
III: Total	52.0	64.0	80	16.0	40.0	67	2.8	36.0	62
Total Boys	8.8	72.0	79	−28.0	64.0	66	−44.0	60.0	60
Total Girls	76.0	68.0	85	8.4	82.0	63	−58.9	96.0	36
Grand Total	52.0	76.0	81	− 6.4	76.4	65	−27.2	72.0	40

The first testing, at enrollment, indicated extreme inferior deviation in emotional adjustment. A high degree of neurotic tendencies evidenced seriously introverted behavior not always, however, apparent to the untrained observer. Compared with norms for boys and girls of similar age, the mean raw score on the Bernreuter Inventory for the entire group was equivalent to the 81st percentile. By the end of the first retest interval, the mean score was equivalent to the 64th percentile; by the close of the in-school period, it had dropped to the 40th percentile.

Mean scores and sigmas, and national percentiles corresponding to the respective mean scores at each test interval, are listed in Table 33.

Inspection of these mean percentile

months, and dropped still further by the second retest (F_3). Comparison of all boys with all girls in the study shows the mean rank of the girls to have been somewhat the higher at entrance, but much the lower at the second retest. As a group, greatest change in reduction of neurotic behavior tendencies in these first 3 years was found to be achieved by the girls rather than the boys, and scores at the third testing indicated the girls were well below average while the boys were slightly above.

To indicate the transition within the total group from original to final percentile rankings, Table 34 has been prepared to show at each test interval the frequencies within each decile classification, based on the norms for high school boys and girls for the Bernreuter test.

Since high rankings are said to be indicative of severe aberration, the increase in numbers in the lower deciles at second and third testings point toward the gradual movement of the group toward emotional stability. This change in central tendency is shown in Figure 10.

At entrance, 93 persons, or almost 37% of the entire group, ranked in the 9th decile, i.e., from 80th to 89th percentile, and over 64% ranked in the 9th and 10th decile. By the end of the in-school period, none ranked in the 10th decile, and only 37, or 14%, ranked in the 9th decile, while 37% then ranked in the lower 4 deciles, i.e., from first to 39th percentile. However, an earlier reference questioned whether low scores on the Bernreuter were truly indicative of satisfactory adjustment, even though high rankings were admitted to characterize extreme cases of maladjustment. (17: 81)

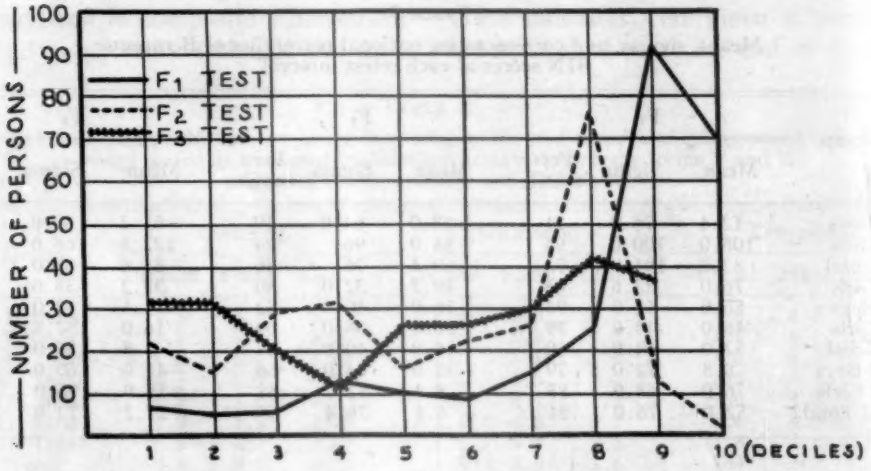


FIG. 10. Change in decile classification frequencies on successive retests on the Bernreuter B1N Scale during the in-school period.

According to the results of the Pintner and Willoughby Scales,[28] tendencies in emotional stability were found to be similar in direction to those resulting from the Bernreuter schedule, but less marked. Percentile ranks for mean scores ranged between 2nd and 3rd percentiles at entrance; from 2nd through 8th at first retest; and from 7th to 36th by the second retest. The mean percentile rank for the total group was the 2nd at entrance; 8th, at first retest; and 12th, at the close of in-school period.

Social maturity as measured by the Vineland Scale showed changes similar to those indicated in emotional maturity. Doll stresses the differentiation between "mental retardation with social incompetence (feeblemindedness) and mental retardation without social incompetence (which is often confused with feeblemindedness)." (50: 2) He further states that the social ages and social quotients are "statistically and methodologically comparable" to Binet M.A.'s

[28] The Pintner scale was given at entrance and at the first retest interval, to Groups II and III; it was not given to Group I, as it had not then been published. Beginning with the second retest (the third test), the Willoughby scale was used, since the Pintner scale was no longer appropriate because of the age of the children.

and I.Q.'s: (50: 15) If, in view of the close relationships, a social quotient below 70 were taken to be indicative of social incompetence, as intelligence quotient below 70 is taken to be indicative of mental incompetence, the Vineland ratings at entrance show these children to have been severely retarded socially as well as mentally.

Sequential measures of social maturity indicated constant rise in social quotients, beginning in the first interval, and continuing through the second. The tabulation of mean quotients at each testing, given in Table 35, shows this gradual improvement, from the mean quotient of 59.4 at entrance to 91.8 at the close of the in-school period.

TABLE 36

Change in numbers of persons in each of Terman's groups at each test interval

Classification	IQ Range	F_1	F_2	F_3
Idiot	0–24			
Imbecile	25–49	88	18	3
Low Moron	50–57	55	28	9
Middle Moron	58–62	49	44	33
High Moron	63–69	62	115	43
Borderline	70–79		35	117
Dull	80–89		13	32
Low Normal	90–99		1	17
High Normal	100–110			2

TABLE 35

Changes in social maturity as measured by changes in Vineland social quotients at entrance (F_1), and at close of first two retest intervals

Group	F_1			F_2			F_3		
	Range	Mean	Sigma	Range	Mean	Sigma	Range	Mean	Sigma
I: Boys	17–106	64.5	22.0	37–106	74.5	17.0	37–126	84.2	17.0
I: Girls	13–116	52.8	19.0	37–136	82.0	23.0	46–136	92.5	21.0
I: Total	13–116	60.3	20.8	37–136	76.8	21.0	37–136	87.4	19.0
II: Girls	35– 87	59.1	21.2	38– 95	73.1	22.0	47–121	94.1	18.3
III: Boys	45– 83	62.4	18.4	58– 85	76.2	21.3	63– 93	86.3	19.6
III: Girls	31– 86	67.0	23.1	36– 92	75.6	20.2	45– 95	91.8	20.1
III: Total	31– 86	64.7	20.3	36– 92	75.2	21.1	45– 95	89.3	19.8
Total Girls	13–116	54.3	20.1	36–136	78.3	22.4	45–136	92.7	19.7
Total Boys	17–106	64.3	21.9	37–106	75.3	21.2	37–126	91.6	18.6
Total	13–116	59.4	20.1	36–136	77.2	21.8	37–136	91.8	19.3

TABLE 34

Changes in numbers of persons in each decile classification at each test interval, according to high school norms for Bernreuter personality inventory

Decile	F_1	F_2	F_3
1	7	22	31
2	5	15	31
3	6	29	20
4	13	31	11
5	10	16	26
6	9	23	26
7	15	26	30
8	26	77	42
9	93	13	37
10	70	2	

While by the end of the second retest interval, the mean quotient of no group reached 100, that of the total group, and of the girls and boys taken separately, can be said to be within the low normal range, if the comparison with intelligence quotient classification is maintained.

Retests of intelligence made at the same 18-month intervals indicated marked fluctuation in individual cases, and a consistent general gain for each group. Progress of the group can be seen in the change in numbers of persons in each of the intelligence quotient classification groups (43: 78) at each retest interval. Table 36 shows the gradual movement up from the lower groups, and the emergence into the dull and low

normal classifications.

It can be seen from the above table that although 88 children, or 34% of the total group were classified in the imbecile range at entrance, by the close of the in-school period only 3, or about 1%, remained in that classification. By the third testing, 166, more than 65%, were no longer classifiable as feeble-minded, although about three-fourths of this emergent group were in the borderline group, with IQ's in the 70's. The analysis of the change in IQ's for each of the groups in the study, from entrance through the close of the in-school period, is shown in Table 37.

TABLE 37

Changes in intelligence as measured by changes in Stanford-Binet IQ's at Entrance (F_1) and at close of first two retest intervals (F_2 and F_3)

Group	F_1			F_2			F_3		
	Range	Mean	Sigma	Range	Mean	Sigma	Range	Mean	Sigma
I: Boys	27–69	47.9	11.2	34–96	63.3	12.0	41– 96	72.6	9.8
I: Girls	34–69	52.3	10.5	41–89	63.9	11.2	41– 96	69.7	12.6
I: Total	27–69	50.5	13.3	34–96	63.5	11.9	41– 96	71.6	11.9
II: Girls	34–69	54.4	8.4	41–89	66.3	9.8	58–103	72.0	9.8
III: Boys	41–68	58.0	7.0	55–89	70.9	7.6	55– 96	77.3	9.1
III: Girls	27–68	45.3	9.8	41–82	59.8	12.6	48–103	72.0	11.9
III: Total	27–68	47.7	9.8	41–89	66.4	11.9	48–103	76.2	9.1
Total Boys	27–69	51.1	11.2	34–96	65.5	9.1	41– 96	74.1	11.2
Total Girls	27–69	53.5	9.1	41–89	64.8	9.8	41–103	69.4	9.1
Grand Total	27–69	52.1	10.5	34–96	65.1	8.4	41–103	71.6	9.8

In the measures of personal, social, and intellectual behavior set forth above, there are evident some absolute differences in initial test performance at entrance between separate groups included in the study, and also between the girls as compared with boys. To test the significance of these differences, and of the differences present between these groups at each retest interval, the respective critical ratios were calculated according to the formula:

$$CR = \frac{\text{difference}}{\text{sigma of difference}}$$

The differences between the mean raw scores on each test for each group at each interval are presented in Table 38.

Throughout the entire in-school period, no significant difference was found in intelligence test performance between boys and girls until at the end of the third test interval, at the final school testing, when the mean IQ of the boys was markedly higher than that of the girls. In social maturity, the high CR between boys and girls at the first testing may have reflected the greater freedom of experience which the boys had enjoyed in comparison with the experiential background of the girls. In this area, however, the difference between boys and girls decreased as the educational program progressed, becoming almost negligible at the third test interval. In the measures of personal and social adjustment, significant differences were found between the boys and girls, which, however, also diminished toward the end of the in-school period. The differences in personal adjustment were marked between groups within the study, and, although the size of this difference tended to increase, its direction changed so that, while the boys and girls both showed a reduction in degree

TABLE 38

Differences of mean raw scores, sigmas of the difference, and critical ratios between Groups I, II, and III, and between total boys and total girls, on selected measures of adjustment, at each test interval

Test	I:II			II:III			I:III			Boys:Girls		
	M_{II}-M_I	Sigma of Difference	CR	M_{III}-M_{II}	Sigma of Difference	CR	M_{III}-M_I	Sigma of Difference	CR	M_B-M_G	Sigma of Difference	CR
(a) Test Interval F_1												
Stanford-Binet	3.9	1.6	2.43	6.7	.2	1.67	2.8	2.0	1.46	2.4	2.4	1.00
Vineland	−1.2	3.0	− .40	5.6	3.4	1.64	4.3	3.0	1.28	10.0	2.7	3.70
Bernreuter B1N	44.0	10.3	4.27	−24.0	10.9	2.60	20.0	13.3	1.50	−67.2	9.1	7.36
Pintner				5.1	1.1	5.73				2.8	4.0	.70
(b) Test Interval F_2												
Stanford-Binet	2.8	.6	1.86	.1	.5	1.97	2.9	2.0	1.45	.7	.6	1.18
Vineland	−3.7	3.0	−1.21	2.1	2.8	.75	−1.6	3.6	.44	3.0	2.7	1.09
Bernreuter B1N	11.2	8.3	1.35	−33.2	6.6	5.03	44.4	5.3	8.30	36.4	9.3	3.93
Pintner	−5.6	8.0	.79	2.3	8.9	.26	−3.1	2.2	1.39	3.2	4.0	.80
(c) Test Interval F_3												
Stanford-Binet	.4	.7	.27	4.2	1.6	2.62	4.6	1.7	2.70	4.7	1.3	3.61
Vineland	6.7	2.6	2.57	− 4.8	3.3	−1.44	1.9	3.3	.57	1.1	2.3	.46
Bernreuter B1N	50.4	32.0	1.54	−30.4	6.4	4.75	86.4	8.2	10.5	−14.9	9.8	1.52
Pintner	.6	8.0	.07	− .4	1.0	.40	.2	1.1	.18	− .2	.74	.27

of maladjustment during the two intervals, at entrance the girls were significantly higher than the boys, by the close of the second test interval they were significantly lower than the boys. This change in relative positions can be seen by a referral to Table 33. The inter-group differences, in general emotional maturity, remained high at the second test interval, then diminished rapidly to insignificance by the third test.

To determine the distribution of change over the total in-school period, critical ratios for each group and the total were computed between initial test and first retest, designated as F_2:F_1; between the first and second retests, designated as F_3 : F_2; and between the initial test and the second retest, designated as F_3:F_1. These ratios are presented in Table 39.

It can be seen from Table 38 that the greatest improvement in adjustment made by the total group was made in the first interval; in most cases gain in the second interval was significant, but not as great as the initial change. Analysis of change within each group shows the same general tendency, except in social maturity for Groups II and III, where the second interval produced greater change than the first. Highest ratios were shown in change in intelligence and social maturity; but change in all three

TABLE 39

Critical ratios between test performance indices of intelligence, social maturity and neuroticism at enrollment and at the close of each retest interval during the in-school period, as measured by selected tests for Groups I, II, and III, and for the total group

Test	Group I			Group II			Group III			Total		
	F2:F1	F3:F2	F3:F1	F2:F1	F3:F2	F3:F1	F2:F1	F3:F2	F3:F1	F2:F1	F3:F2	F3:F1
Stanford-Binet	7.64	5.40	12.50	9.15	4.07	13.54	6.59	4.45	15.00	14.4	8.13	19.6
Vineland	5.89	3.92	10.0	4.41	7.00	12.10	2.60	4.63	6.13	9.3	8.6	18.1
Bernreuter B1N	7.28	2.36	9.69	6.23	3.02	8.92	3.46	1.74	4.87	8.8	3.2	12.3
Pintner		15.31		10.00	11.11	20.9	4.00	11.8	15.90	4.11	14.2	14.5

TABLE 40

Number of pupils changing residence one, two, or three times during first two evaluation periods

Number of Changes	Group I Boys	Group I Girls	Group I Total	Group II Total	Group III Boys	Group III Girls	Group III Total	Total
1	18	16	34	14	1	1	2	50
2	4	4	8	5				13
3		1		1				1
Total	22	21	42	20	1	1	2	64

of the areas was closely related. An interpretation of these statistical measures, however, is dependent on the validity and reliability of the measures used to gather basic data. To the extent that the selected measures were invalid and/or unreliable, any statistical treatment of results must be fallible.

HOME AND COMMUNITY BACKGROUNDS DURING THE IN-SCHOOL PERIOD

Community socio-economic status. During the in-school period, some changes in the socio-economic status of the families of these pupils resulted from changes in residence and in economic self-sufficiency status of the home.

TABLE 41

Gross and net gain or loss of pupils by community areas affected by change in pupil residence during in-school period

Community Area	Gross Change Gain	Gross Change Loss	Net Change Gain	Net Change Loss
4	1		1	
5	1	2		1
8	2		2	
15	1		1	
19	2	1	1	
21		2		2
22	3	5		2
23	1	2		1
24	11	7	4	
25	1		1	
27		1		1
28	1	4		3
29	1		1	
39	1		1	
43	1		1	
45		1		1
46		1		1
61	1		1	
68		2		2
Total	28	28	14	14

Of the entire 254 children, only 64 moved during this first 3 years, and of this number, only 28 moved away from their original community areas. The remaining 36 changed residence only within the same community, moves which resulted in no change in community socio-economic ratings. 50 of the 64 moved only once in this 3 year period; 13 moved twice; and the family of 1 pupil moved 3 times. Most changes of residence occurred in Group I, where 43 were made; only 2 were made in Group III. The scatter of these changes is given in Table 40.

The geographic configuration of the contributory district of pupils in this study (see Table 24) was affected but very little by these changes in residence during this 3-year interval. Some changes, however, were made in the number of children in the study from each of the community areas. This movement from and into areas is shown in Table 41.

The greatest gross change occurred in community area number 24, which gained 11 pupils and lost 7. Of the total 28 pupils who changed residence, 20 moved into areas immediately adjacent to that of their original residence.

In the 28 cases where moves were made, 10 moved to community areas of improved socio-economic status, 11 to areas of reduced status, and 7 moved to areas in which the status was the same as

that from which they moved. The degree of improvement or reduction incurred by these changes are given in Table 42, and the over-all change in numbers of pupils in community areas according to their economic classification are given in Table 43.

Economic self-sufficiency status of family. While at time of entrance to the special centers 107 families of children in the study were receiving some degree of public assistance, by the end of the in-school period this number had dropped to a low of 19 families, or only 7½%, as compared with the original 42%. But the national economic setting of which this picture was but a fragment had also changed. By November of 1938, only 16⅔% of the total population was receiving economic relief of either a direct or indirect nature, as contrasted with 20%, in 1935. At the same time that the relief population was being reduced, the percentage of unemployed increased slightly, from 36% in 1935 to 37% in 1938. Therefore, the number in financial need who were not being helped by public assistance increased, as relief rolls were cut and unemployment increased. (46: 95-96)

Some of this lag between eligibility for economic assistance and unemployment of the principal wage earner of the family was ameliorated by the part-time earnings of a number of the boys and girls themselves, who were able to secure work in afternoons, evenings, and week-ends. While their earnings were small, they raised the absolute financial level of the home by the amount of these wages. In addition to this economic contribution to the home, their ability to get spare-time work and do a job well enough to merit pay and continuance of that employment, simple as it might be, increased their self-confidence and their own feeling of usefulness and of service to others. Most of their jobs were in domestic service work for the girls, or as helpers in service stations for the boys. The various kinds of part-time employment held by these children during the 3-year in-school period are detailed in Table 44.

By the end of the in-school period, 87 children, or about 34% of the entire

TABLE 42

Degree and direction of changes in socio-economic status incurred by changes in residence during first two evaluation periods

Direction	Number
Next higher area	4
Second higher area	4
Third higher area	2
Next lower area	6
Second lower area	5
Total improved status	10
Total reduced status	11
Total unchanged status	7
Grand total	18

TABLE 43

Total and net gains and losses of pupils in each socio-economic classification of community areas

Area Classification	Gain	Loss	Net Change
Very low	12	11	1
Low	6	6	0
Middle	6	10	−4
High	2	0	2
Very high	2	1	1

TABLE 44

Part-time positions held by eighty-seven children during the in-school period

Position	Number
Domestic service	19
Department store clerks	12
Typists	9
File clerks	8
Nursery assistants	3
Drug store clerks	8
Service station attendants	28
Total	87

group, held part-time positions, ranging in salary from $1.50 to $12 a week. The mean weekly wage for these spare-time jobs was $6.35, and the median duration was 2 years and 3 months.

Physical defects. The educational program provided for clinical treatment of remediable physical defects. Of the physical defects recorded as present at entrance, all dental problems were treated at the free clinic maintained by the city public school system; all visually defective children were referred for correction, and one received specialized surgery and post-surgical treatment for hyperopic astigmatism. Glandular treatment was made available to the 4 cases requiring it, but the malfunction was not corrected at the close of the in-school period. The correction of these defects improved the physical health of the children, and to the extent that health is a factor in adjustment and competency, thus influenced their changing behavior patterns.

SUMMARY OF CHANGE DURING IN-SCHOOL PERIOD

The 3-year period of in-school attendance was marked by minor changes in socio-economic status of homes and communities, and in the health and social status of the family. However, changes in the home and community environment were negligible, except for increased family income due in part to the part-time employment of the children while in school.

During their period of participation in the experimental program of the special centers, improved personal adjustment was indicated by increased range and quality of leisure-time interests, improved personal appearance, and responsibility for grooming. Likewise, an analysis of the methods used in meeting conflict situations showed a tendency toward more frequent use of direct response rather than the use of substitute mechanisms. Their activities indicated increased emancipation from home and family pressure, greater self-responsibility, ability and willingness to serve in positions of usefulness to others, and growing ability to get and keep part-time employment. Their social, or group, behavior showed increasing social maturation and competency in activities in which normal children of their age were expected to participate. In addition, they showed gain in academic skill in the tool subjects, with an average gain in composite achievement of 3 years and 8 months in the 3-year period. Gains in intelligence and adjustment were also found on standardized measures of personal and social competency, and on clinical intelligence retests.

Greatest gains occurred in the first 18 months, but gains in the second interval were still significant. By the end of the in-school period a large percentage of the group were classifiable as of borderline intelligence, rather than feeble-minded; a smaller number had moved into the group classified as "dull"; and a few were placeable in the low-normal group. From their original status of extreme maladjustment, a large part of the group showed test performance equal to or better than that of average persons of their age group, and such test performance was accompanied by comparable achievement in academic and social activities.

Chapter VI

Academic, Vocational, and Social Competency in the Post-school Period

The post school evaluation period was that period following the termination of special center attendance, and itself terminated by the closing date of the study.[29] The term "post-school" was adopted thus arbitrarily, and, consequently, school enrollment voluntarily entered into the following withdrawal from the special centers, will be recorded in the account of this period.

The length of the post-school period varied with each of the groups included in the study. Group I extended over a five-year period; Group II, for four years; and Group III, one and a half years.[30]

All children who participated in the study at its beginning were included in the follow-up investigation both during special center attendance, and in the post-school period. However, 14 months before the end of the study one girl moved to another city, and although correspondence with her was maintained, she could not be included in the final testing for her group.[31] Of the 16 boys who were in the armed services by the close of the study, 4 could not be tested at the last two intervals, and 6 others had to be omitted from the last interval alone, because they could not be back on leave during the time of the retests. Nine months before the termination date one of the boys[32] was killed in action; and 2 years and 8 months before the closing date, one of the girls[33] died of tuberculosis.

Family and Community Backgrounds in the Post-school Period

Community socio-economic status. During the post-school period, 123 persons changed residence from their homes at the close of the in-school period. This number included those who moved as part of a family unit with their parents, as well as those who changed residence after marriage. Of this number, 84 moved to new community areas, while the remaining 39 moved only within their original community.

88 did not change residence during the entire period of the study. Of this group, 19 were from Group I; 35 from Group II; and 34 from Group III. 49 of those children lived in the immediate neighborhood of one of the experimental centers. 8 of the group who did not change residence lived in areas rated as "very low" in economic value; 20 were in "low" areas; 49 in middle class areas; 5 in "high," and 6 in "very high" areas.

The increased number of changed residences did not materially affect the configuration of the original contributory district of the study. However, 19 areas were added, and 5 were eliminated by these changes.

The net changes resulted in the addition of 1 "low" area, 3 "middle-class" areas, and 3 "high" areas; and in the loss of 3 "very high" areas. Within individual community areas, the greatest net change was made in area number 24,

[29] December, 1943.

[30] The post-school period for Group I dated from December, 1938; for Group II, from December, 1939; and for Group III, June, 1942.

[31] Group II, for which the final testing date was December, 1942.

[32] From Group I, still reported as missing in action, in December, 1943, but official notice of his death received the following April, 1944.

[33] From Group II.

which lost 34 persons, or almost half of its original 76. This community area held within it the residences of over one-fourth of the pupils at the beginning of the study, and was also the locale of both Centers A and B; however, it was a "very low" area according to economic classification, and movement away from this district at the close of the in-school period may be explained partly by the desire of families to move to homes in better economic areas, when proximity to school was no longer an important factor.

TABLE 45

Residence gains and losses according to economic classification of community areas

Economic Classification	Gross Change		Net Change	
	Gain	Loss	Gain	Loss
Very low	1	36		35
Low	12	4	8	
Middle	20	1	19	
High	5	4	1	
Very high	10	3	7	
Totals	48	48	35	35

An analysis of the losses and gains to areas in each of the economic classifications is shown in Table 45.

The greatest losses were found in those areas classified as "very low," while the greatest gains were in the middle class areas. Thirty-four of the total losses from the "very low" areas were from community area number 24, the district in which were located Centers A and B.

Of the 84 persons whose change in residence involved a change into another community area, 58 moved to areas of higher economic status, 18 to areas of reduced status, and in 8 cases the status remained unchanged. The degrees of improvement or reduction resulting from changes of residence in the post-school period are summarized in Table 46.

Of the 22 moves into a next higher area, 15 were from "very low" to "low" area; 4, from "low" to "middle-class"; 1, from "middle-class" to "high"; and 2, from "high" to "very high." Of the 25 moves into a 2nd higher area, 24 were from a "low" to a "middle-class" area, and 1 was from a "middle-class" to a

TABLE 46

Degree and direction of changes in socio-economic status incurred by changes in residence in the post-school period

Direction	Number
Next higher area	22
Second higher area	25
Third higher area	5
Fourth higher area	6
Next lower area	10
Second lower area	7
Third lower area	1
Total improved status	58
Total reduced	18
Total unchanged	8

TABLE 47

Changes in residence in the post-school period according to economic classification of original and final community areas

Classification of Original Area	Final Residence Classification					Total
	Very Low	Low	Middle	High	Very High	
Very low	1	15	24	3	6	49
Low	5	1	4		2	12
Middle	7	3	3	1	1	15
High	1		1		2	4
Very high				1	3	4
Totals	14	19	32	5	14	84

TABLE 48

Distribution of pupils according to the economic classification of their original and final residential community areas

Economic Classification	Number of Pupils		Percentage of Total Group	
	Original	Final	Original	Final
Very low	105	70	41.3	27.5
Low	80	87	31.6	34.2
Middle class	39	56	15.3	22.0
High	8	9	3.1	3.5
Very high	22	32	8.7	12.8
Totals	254	254	100.0	100.0

"very high" area. 3 of the 5 moves into a 3rd higher area were from "very low" to "high" area; the other 2 were from "low" to "very high." Of the 6 moves into a 4th higher area, all were from "very low" to "very high" areas.

In moves which resulted in a lowered economic status, of the 10 cases in which changes of residence were made into the next lower area, 5 were from a "low" area, to a "very low;" 3 were a drop to "low" from the middle class districts; 1 from "high" to "middle class;" and 1 from "very high" to "high."

Of the 8 cases in which change in residence made no change in community economic status, as determined by the economic classification, 1 was "low," 4 were in "middle class" areas, and 3 were in "very high" districts. The detail of these changes in community socio-economic status resulting from change of residence is presented in Table 47.

From Table 47 it can be seen that almost two-thirds of the changes were occasioned by the movements out of the areas classified as "very low." Greatest gains of individuals were made by middle class areas. By the end of the post-school period, the "very low" areas had lost 35 pupils, the "low" areas had gained 7, "middle-class" had gained 17, "high" areas had gained 1, and "very high" had gained 10 individuals. Thus, at the close of the study, the distribution of pupils according to the economic classification of their respective community areas was that given in Table 48, together with the comparative distribution at the beginning of the study.

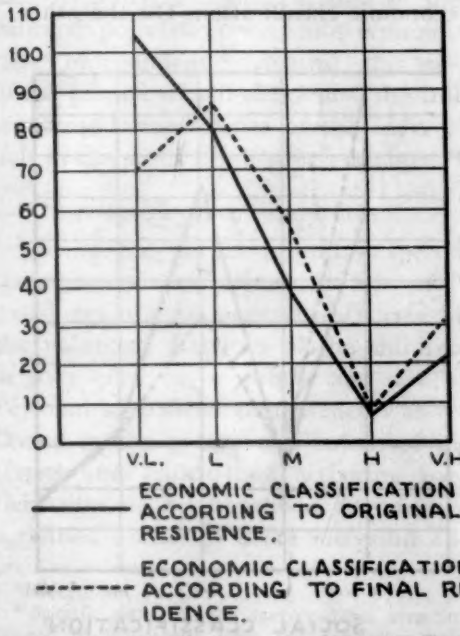


FIG. 11. Distribution of pupils according to economic classification of areas of their original and final residence.

In general the nature of the socio-economic distribution at the close of the study was very similar to that at the beginning. This is further illustrated

TABLE 49

Distribution of pupils according to social classification on basis of delinquency of their original and final residential community areas

Social Classification	Number of Pupils		Percentage of Total Group	
	Original	Final	Original	Final
Very low	86	115	33.8	45.4
Low	25	28	9.8	11.0
Middle class	93	62	36.7	24.4
High	34	33	13.4	12.9
Very high	16	16	6.3	6.3
Total	254	254	100.0	100.0

in the frequency polygon plotted in Figure 11.

While the number of persons living in very low areas was cut by one-third by the end of the study, there were still 157 individuals, or 61.7% of the total group, living in areas substandard in relation to economic classification. On the other hand, only 16.3% lived in community areas that were rated above average, although of this percentage 12.8% were in the very highest levels.

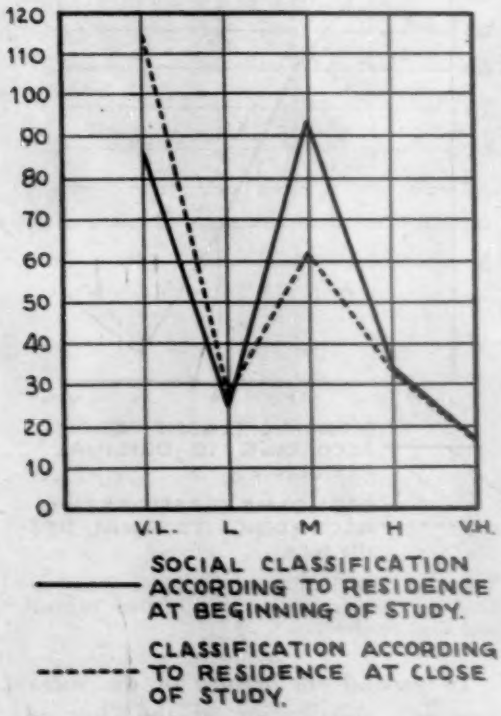


FIG. 12. Distribution of pupils according to social classification of their initial and final residence.

Change in residence also resulted in some change in the distribution of students over community areas according to rates of delinquency in each of the areas represented, as shown in Table 49. All net gains resulting from these post-school moves were made by the areas having "low," or "very low" rates of delinquency; while net losses were sustained by areas where the rate was average or high. By the close of the study, areas having very low rates had gained a net of 29 individuals; areas of low rates had gained 3; those of average rates had gained 1; and areas of very high rates gained 1 and lost 1, resulting in no net change. Thus, by the end of the post-school period, more than half the entire group lived in community areas in which the rate of delinquency was classified as "low" or "very low," but over 19% still lived in districts of "high" or "very high" rate, where 1 out of every 4 in the population had either a delinquent or criminal court record.

In general, however, the distribution of homes according to the social classification as determined by rates of delinquency, did not differ greatly at the end of the study from the distribution at the

beginning. The actual similarity can be seen in the frequency polygons in Figure 12 based on data tabulated in Table 49.

From both Figure 11 and Figure 12 it is evident that while minor changes in residence occurred, the entire group was situated in much the same socio-economic home environment at the close of the post-school period as had been the case at the beginning of special center attendance and at the close of the in-school period.

Economic self-sufficiency status of family. The families of only 17 children received public assistance, at any time during the post-school period, and none were so dependent during the last year of the study. In those cases where the children in the study married and established themselves away from parental homes, there were no cases of economic dependence.

In this post-school period, however, increase in economic self-sufficiency of these families was a part of an encompassing national picture.[34] With the passage of the Burke-Wadsworth Conscription Bill in 1940, employment began to rise as part of the potential labor market was drained off for the year of training provided for in that bill. With the Selective Service Act, following the attack on Pearl Harbor on December 7, 1941, the labor "surplus" was further cut down, while production activities received a sharp impetus as war needs took shape and made insistent inroads on the national industrial picture. As the war progressed, the economic setting reversed itself over the situation of 1935 to 1938 yet, although by the terminal date of the study,[35] unemployment relief was considered hardly more than a mythical figment, and "full employment" was thought to be an actuality as well as a war slogan, unemployment benefits paid under provisions of the Social Security Act reached a national war-time high of over $5,000,000 for the month of December, 1943; and this sum represented the largest monthly payment since July of 1942, and the greatest increase over the immediately preceding months since the beginning of the war (32: 14). Thus, while the apparent picture of maximal employment for all pervaded the national economic setting at the close of the study, analysis of unemployment benefits paid at that date indicated a significant part of the national population were not economically independent.[36] Against this national picture of self-sufficiency, the full economic independence of the individuals in this study can best be evaluated.[37]

EXPERIENTIAL ACTIVITIES

During the period following special center attendance adjustment was evaluated against the pragmatic criteria of the voluntary activities of the children as they grew to be youths and adults. Personal and social competency was reflected in the nature and extent of interests and leisure-time activities, participation in neighborhood community activities, ability to make successful ad-

[34] The post-school period began January, 1939, for Group I; January, 1940, for Group II; and July, 1942, for Group III. It extended through December 31, 1943, for all groups.

[35] December, 1943.

[36] Specific data for the metropolitan area included in this study were not available; only national figures had been reported.

[37] During the post-school period, the self-sufficiency status of these individuals and families changed from its position as an uncontrolled to a controlled environmental factor, since in that period the individuals in the study emerged from children, economically dependent on parents and family, to youth and adults, economically independent of any but their own resources.

justments in employment, and contributions to family living. Academic competency was evidenced in voluntary continuation of academic and/or vocational education, the quality of achievement in such continued education, the kinds of employment secured, the duration of jobs, and the regularity and amount of independent incomes.

Leisure-time activities. In general, the leisure-time activities enjoyed by the group followed the pattern which had started formation while in attendance at the special center. The boys continued to be most interested in sports and crafts, while the favorite recreation of the girls was dancing, followed closely in preference by playing musical instruments, and tap and acrobatic dancing. Reading continued to be a favorite pastime for both boys and girls. However, with the increase of emphasis on defense activities, leisure time itself was cut to a minimum as many of both boys and girls took on longer working hours, sometimes holding two positions with different firms simultaneously. More and more of their spare time was devoted to advanced training for defense work, to such community activities as bond drives, Red Cross service, and U.S.O. services. As the post-school period drew to a close, almost all time not given to school or employment was spent in such community war-time services.

Voluntary education. Voluntary education, or any special training freely sought by the boys and girls in this study after special center attendance, was significant because of two factors:

1. The desire of the student to continue further education after he had completed the legal requirement of the Compulsory School Act was considered to be evidence of his feeling of pleasure and satisfaction in his educational achievements and confidence in his personal adjustments made in school situations.
2. Educational attendance beyond the legal requirements was itself assumed to be evidence of satisfactory achievement and adjustment in the school situation, since schools could refuse to permit such attendance if it were considered to be no longer profitable to the student, or if such attendance could be considered to be harmful to the progress of other students.

Of the 254 children included in the study, 216, or 85%, continued voluntary training beyond the compulsory school attendance requirements. The greater part of this group were those who, after graduation from the elementary grades, continued on through regular high school courses, and, in a few cases, into post-high school education. Most of the voluntary education received in the post-school period was acquired in part-time attendance in evening school sessions, and summer terms, since a large number of the students went into full-time employment either directly from the special centers, or very shortly thereafter. The kinds of voluntary training, and the number receiving each, are shown in Table 50.

Almost one-half of all the students completed some high school work; 27.2% graduated from high school, and slightly more than 13% continued into post-high school education. The number of individuals attaining each of the first 12 grades by the closing date of the study is given in Table 51.

The biggest drop in school enrollment in this group of boys and girls took place between the 8th and 9th grades, when 70 discontinued further formal education. Many of these cases were boys and girls who completed 8th grade work, received their elementary certificate, (frequently while employed full-time

during the day), and who then took special trade or business "short courses," also in the evenings, to prepare them for better positions. Almost all voluntary education was characterized by a vocational objective.

Of the 127 who began high school work, 61, or slightly more than one-half, completed a 4 year curriculum and received a high school certificate. Thus, about 26.3% of the total group included in the study completed high school. The percentage of these students who completed 4 years of high school, in relation to the gross number who entered 9th grade, compares favorably with the percentage of all entering freshmen who completed high school for the same total metropolitan area (28: 560). The respective percentages are detailed in Table 52.

Part of this perseverance toward the completion of high school curricula as evidenced by high percentages in Table 52, was accounted for by the fact that a

TABLE 50

Kinds of voluntary training attained beyond compulsory school attendance requirements and number of students attaining each

Kind of Training	I		II	III		Total
	B	G		B	G	
Prevocational (elementary level)	8	15	19	3	8	53
Post-elementary vocational	5	2	6	2	0	15
High school	38	24	40	12	10	124
Post-high school	13	5	16	0	0	34
Totals	64	46	81	17	18	226

TABLE 51

Number of students having completed each of the first twelve grades by the termination of the study

Group	School Year											
	1	2	3	4	5	6	7	8	9	10	11	12
I: Girls	40	40	40	40	40	38	37	28	24	23	18	14
I: Boys	70	70	70	69	68	67	64	59	49	47	43	39
I: Total	110	110	110	109	108	105	101	87	73	70	61	53
II: Total	91	91	91	90	88	85	82	71	21	16	11	7
III: Girls	21	21	21	20	20	19	17	14	14	9	4	3
III: Boys	32	32	32	32	30	28	27	25	19	16	5	4
Total Boys	102	102	102	101	98	95	91	84	68	63	48	43
Total Girls	152	152	152	150	148	142	136	113	59	48	33	24
Grand Total	254	254	254	251	246	237	227	197	127	111	81	67

TABLE 52

Comparative percentages of entering freshmen who graduated from four year high school courses, for experimental special center pupils and for total metropolitan area

Group	Percentage in Each Grade			
	9	10	11	12
Special Center Pupils	100.0	91.3	70.0	54.3
Total Metropolitan Area	100.0	79.3	65.9	59.1

relatively small number of the total original group elected to begin 9th grade work. The small group who did so choose were highly selected by the very reason of this volitional factor. In addition, the pupils from the special centers were older chronologically than the average high school student, and they were more socially mature, inasmuch as most of them were employed and financially independent.

Of the 34 students who continued into post-high school education, one-half were in technical training fields, and approximately one-third were in commercial areas. The distribution of this later training and its duration are given in Table 53.

Voluntary training in both the musical and graphic arts in all six cases was a continuation of leisure-time interest activities developed and encouraged in the period of special center attendance. The training taken in specialized technical fields was motivated by vocational opportunities for qualified defense workers. Included in these fields were courses in electrical theory and equipment construction.

While the average length of post-high school training was slightly more than one year in length, it ranged from three months to three years, and at the close of the study 12 of the 34 were still so enrolled. Thus the true average duration was probably in excess of the mean duration here found. At the conclusion of the study 51 individuals were still in school attendance, in either full or part-time, as shown in Table 54.

TABLE 53

Kinds of voluntary post-high school training attained, number of pupils attaining each, and mean duration in months for each

Nature of Training	Number			Duration in Months	
	Boys	Girls	Total	Range	Mean
Commercial	2	9	11	12–18	12.5
Technical	9	8	17	6–12	8.7
Musical, instrumental	1	2	3	22–36	29.0
Musical, vocal	0	2	2	24	24.0
Graphic arts	1	0	1	32	32.0
Total	13	21	34	3–36	13.0

TABLE 54

Number in school attendance at termination of the study

	Group			Total
	I	II	III	
Full time	4	2	0	6
High school	2	2		4
Post-high school	2			2
Part time	12	11	22	45
High school	7	9	19	35
Post-high school	5	2	3	10
Totals				
High school	9	11	19	39
Post-high school	7	2	3	12
Grand Totals	16	13	22	51

Inasmuch as 39 were still in high school attendance (either full or part time), the totals given in Table 50 can be considered as the minimum school levels completed by the individuals included in this study. While continuance in attendance does not constitute evidence of completion of high school requirements, or of any specific grade level, it does offer an additional number of potential high school graduates and post-high school students.

Employment. In addition to the record of educational activities, another evidence of change in behavior can be found in the employment experiences of these boys and girls in the post-school period. An analysis of the employment success of both boys and girls during the post-school period, during which they were available for employment, showed 12 girls, or about 8% of all girls in the study, were not employed at any time during the post-school period. 2 of these were in full time school attendance, at the close of the study; 1 died while still in a full time educational program; while the remaining 9 had married at the conclusion of their voluntary continuance of educational training, and had given their full attention to homemaking.

Of the boys, all but 7, or 6.8% of the total boys represented, were employed during their employable period. Of these 7 boys, 1 had been inducted into the armed services before graduation from high school, where he was in full time attendance; 1 had enlisted in the Royal Canadian Air Force before high school graduation; 4 were still in full time educational programs, 2 in high school and 2 in post-high school; and 1 had never been employed, nor had he continued extended voluntary training.

Thus, of the total 254 individuals in the investigation, only 19, or 7.5%, remained unemployed during the post-school period. The other 92.5% were employed full time for an average of 4.2 years of the total post-school period. Turnover was slight; the average number of jobs held in the entire period was 1.7.

For classification purposes, the kinds of jobs held were catalogued as unskilled, semi-skilled, skilled, clerical, managerial, and professional. In the unskilled group were included those occupations requiring no previous training in necessary motor skills, no high degree of discrimination or judgment on the part of the worker, and no complex relationships with other workers. In the semi-skilled group were included those requiring some specific motor skills or learned mechanical techniques; some degree of critical evaluation of the finished product, or crude discriminative judgment; and a closer relationship with other peple in the work situation than was required of those in the unskilled group. In the skilled group were included occupations which demanded a high degree of motor skills or mechanical technique; precision in finished products, or close relationship with other workers and with the public. Clerical occupations included those in business or distributive fields, and managerial or supervisory positions were those in which were required responsibility for other workers, or for the inspection of finished products.

In the unskilled occupations, the girls were employed in housework, as machine operators in factories, as packers, and as demonstrators of commercial products; boys were found in such occupations as truck drivers, machine operators and general factory work, service station attendants, bus boys, dairy

assistants, railroad car checkers, canvassers, elevator operators, and theater ushers.

In the semi-skilled area, girls worked as bookbinders, manglers, waitresses, and as tailors, or in millinery work; boys held such jobs as utility meter readers, service repair men, telephone linemen, auto mechanic repairs, and as waiters and tailors.

Skilled work for the girls included assembly line inspection, welding, blueprint checking, and parachute making. The boys were employed as plastic molders, frame makers, nursery men, pattern makers, linotype operators, welders, blueprint etchers, bakers, and assembly line inspection.

TABLE 55

Skill classification of occupations held by 95 boys and 142 girls in the post-school period

Classification	Boys	Girls	Total
Unskilled	43	48	91
Semi-skilled	32	30	62
Skilled	26	29	55
Clerical	32	59	91
Professional	2	4	6
Total	135	170	305

Clerical workers among the girls were sales clerks, general office workers, dictaphone operators, secretarial workers, switchboard operators, stock clerks, mailing clerks, and general typists. The boys in clerical work were found also to be employed as stock clerks and in general office work; as sales clerks and department cashiers, in general clerical work, and as department managers.

Professional workers among the girls included a beauty operator, a private music and dancing teacher, a music and dance performer, a reference librarian, and a nurse. The boys were represented in the professional areas by two commercial artists.

During the post-school period the 254 persons held a total of 309 jobs, of which 29.4% were in unskilled occupations, and another 20% in semi-skilled. Table 55 shows the distribution of all occupations held in the post-school period, according to the skill classification.

From the above table it can be seen that both boys and girls found employment in similar occupational areas, with the exception of clerical positions, in which many more girls than boys found work. Two-thirds of all employment was in industry, in unskilled, semi-skilled, or skilled occupations, yet only 49.4% was in unskilled or semi-skilled work. Part of the employment in skilled occupations was due to the increased need for such labor in war industries, a need which became more acute from 1941 until the end of the study. An analysis of occupations in which these individuals were employed at the close of the study indicated the distribution of occupations listed in Table 56.

According to this table, 40.7% of the 81 boys employed in civilian jobs at the close of the study, were in unskilled or semi-skilled occupations, while 27.1% were in skilled occupations, and another 30.8% were in clerical jobs. Of the girls, only 33.3% were in unskilled or semi-skilled occupations at the close of the study, 28.7% were in skilled work, and 35.6% were in clerical work. Thus, the

TABLE 56

Skill classification of occupations held by 81 boys and 132 girls at close of the study

Classification	Boys	Girls	Total
Unskilled	13	18	31
Semi-skilled	20	26	46
Skilled	23	38	61
Clerical	25	50	75
Total	81	132	213

final employment for both boys and girls was found to be distributed among the 5 skill classifications as follows: unskilled and semi-skilled, 36.1%; skilled, 28.1%; and clerical, 35.6%.

The unskilled and semi-skilled workers which comprised the 36.1% at the termination date were distributed among jobs as shown in Table 57.

The largest single group of occupations represented by the unskilled and semi-skilled workers at the close of the study was that including mechanical repairs and services which were represented by 31.5% of the total number of final employments. This block, however, was composed entirely of boys, and these represented 53.4% of all boys' jobs. Another block of occupations was that of factory machine operators, varying in complexity of motor skills involved, but requiring only routine operations. This kind of employment accounted for 24.6% of all the final jobs held.

The skilled occupations in which 28.1% of all final employment was held, are detailed in Table 58.

In those occupations in which both boys and girls were employed, there was a slightly larger number of girls in comparison with boys in final employment. However, the total percentage of boys in skilled trades was 27.1 at the termination of the investigation, as compared with 28.7 of the girls so employed.

The 26.3% who were in clerical occupations at the end of the study were distributed as shown in Table 59.

70.8% of all persons in clerical work were employed as general office workers, mail clerks, and sales clerks. The number of girls in clerical work was approximately twice the number of boys; the percentage of girls so employed was 35.6; of boys, 30.8.

Of the 4 in professional services at the termination of the study, one boy was in commercial art, one girl was in nursing, one in entertainment as a member of a traveling stock company, and one was a beauty operator.

Nine of the girls and seven of the boys were in managerial or supervisory positions in industry, where they had respon-

TABLE 57

Distribution of final jobs in unskilled and semi-skilled occupations

Occupation	Boys	Girls	Total
Power machine operator	6	12	18
Tailoring	5	7	12
Service repairman	9	0	9
Truck driver	7	0	7
Shipping clerk	2	3	5
Railroad car checker	5	0	5
Frame trimmer	0	5	5
Demonstrator	0	3	3
Meter reader	3	0	3
Loom repairman	2	0	2
Waiter	2	0	2
Telephone lineman	1	0	1
Gas station attendant	1	0	1
Total	43	30	73

TABLE 58

Distribution of final jobs in skilled occupations

Occupations	Boys	Girls	Total
Assembly inspection	5	8	13
Welding	3	7	10
Blueprint checking	3	5	8
Blueprint etching	3	0	3
Linotyping	2	0	2
Pattern making	2	0	2
Plastic molding	2	0	2
Woodworking	1	0	1
Total	21	20	41

TABLE 59

Distribution of final jobs in clerical occupations

Occupations	Boys	Girls	Total
General clerical	10	18	28
Retail sales	8	15	23
Secretarial	0	6	6
Filing	4	0	4
Dictaphone transcription	0	3	3
Switchboard operator	0	3	3
Total	22	45	67

sibility for other workers. Another 14 were in inspection duties, where the precision of finished products was their responsibility. In addition, 1 boy was assistant manager of a floral shop.

The mean duration for all jobs held by the girls in the post-school period was 3 years and 6 months; for the boys, 2 years and 10 months. The accuracy of these figures was limited by the fact that 86.8% of the girls, and 79.4% of the boys, were still employed at the close of the study. Thus, for these 83.8% of the group, the time recorded as duration of employment was limited by the terminal date of the study rather than by their release from employment. At the close of the study, the girls were found to have been in their final job a mean period of 3 years and 3 months; the boys, 1 year and 9 months. These figures, likewise, were limited by the closing date of the investigation.

TABLE 60

Occupational status of all persons in total experimental group at close of study

Occupational Status	Boys	Girls	Total
Employed	81	132	213
Military service	15	0	15
In school (full time)	4	2	6
Married (not employed)	0	9	9
Idle (permanently)	1	0	1
Idle (temporarily)	0	8	8
Deceased	1	1	2
Totals	102	152	254

The length of employment of the boys in the total post-school period, and also the length of final employment, was affected by the entrance of 16 into the armed services. At the close of the study, 15 of these boys were still in service, having served from 3 months to 2 years; the average service period was 8 months.[38] One of the boys was reported as missing in action 9 months before the close of the study, after serving 1 year and 9 months, 1 year of which was with the Royal Canadian Air Force.

Through the co-operation of the social service agency charged with the responsibility of counselling in cases of maladjustment in the army, these cases were cleared for reports of such conflicts, of which none were on record. The absence of such a reported contact by this agency, and the continuation of these soldiers in service, was accepted as evidence of satisfactory emotional adjustment and performance of duty in military life. Beyond this, the presentation of the Distinguished Flying Cross and the Air Medal to the mother of the Air Force Lieutenant then missing in action, and the attainment of 2 soldiers to the rank of sergeant and 3 to first lieutenant, were taken as further evidence of success in these individual cases.

For the total post-school period, the girls earned a weekly salary ranging from $10 to $64, with a mean of $23.50; for the boys, the range was from $6 to $84, with a mean salary of $32. At the close of the study, the girls were earning a mean salary of $27 per week, with a range from $10 to $60. The mean salary of the boys was $28, with a range from $13 to $84. By the end of the study the median salary for the total group was $32.07.

At the termination of the study, the occupational status of the entire group was as given in Table 60.

At the closing date all but 24 of the total original group were gainfully employed either in industry or in military service. Of the 24 classified as "unemployed," 6 were in full-time school at-

[38] Limited also by the termination of the study, since these boys were still in service on December 31, 1943.

tendance; 9 were girls who had married and were maintaining financially self-sufficient families on their husbands' salaries; 8 were temporarily idle, being unemployed at the closing date of the study, but previously employed for 80% or more of the time they were available for employment; and 1 was classified as permanently idle, having never been employed since leaving school.

In addition to the educational and employment activities in which these boys and girls participated, a study of their social adjustment in the family and community was desired. Part of this adjustment was evidenced by the account of personal interests and leisure-time activities in which these people participated, and the civic and community responsibilities which they shared. These activities have been presented in the first part of this chapter, in relation to their personal behavior.

Besides these positive evidences of expanded personal and social interests, another kind of information regarding social adjustment is found in the contacts of these individuals with social agencies in the post-school period. To present these data, the same classification of welfare services has been used that was used earlier (Chapter III): advisory and protective agencies, welfare and dependency agencies; medical clinics and hospitals; behavioral and psychiatric clinics; special schools and institutions; and courts. The contacts of these agencies in the post-school period with the persons in the experimental group are given in Table 61.

Of the total 254 pupils, 24, or 9.4%, had some contact with social services agencies for help in a problem of personal or community adjustment. However, the 16 clients of advisory, protective, welfare, and dependence agencies were the families of the pupils in this study, rather than the students themselves. As the boys and girls in this study married and established homes of their own, none were in need of financial assistance.

TABLE 61

Contacts with social agencies during the total post-school period

Types of agencies	Groups			Total
	I	II	III	
Advisory and protective	0	2	1	3
Welfare and dependency	8	4	1	13
Medical clinics and hospitals	1	2	0	3
Behavior and psychiatric clinics	0	0	0	0
Special schools and institutions	3	0	1	4
Courts	1	0	0	1
Totals	13	8	3	24

Fifteen of the girls and 3 of the boys were married at the close of the study, and were maintaining financially independent family units. Six of the girls continued working after marriage; in the other cases the sustaining family income was that earned by the husband. There was only one inter-marriage between persons in the study.

The median age at marriage for the 15 girls was 19 years and 6 months, although 2 were married between 16½ and 17 years of age. Eleven of the marriages resulted in children. By the end of the study 4 families had 1 child each; 6 had 2 children; and 1 had 3. The ages

of these children ranged from 4 months to 4 years of age. Mental examinations were not made of the children as a part of this study, but the hospitals and welfare clinics in which they received treatment reported all to be in good physical condition, and, to all appearances, normal mentally. There had not yet appeared any deviations in their developmental history. However, such data are incomplete and unstandardized, and, therefore, cannot serve as a basis for judgment. These married couples were well adjusted to themselves and to the community, judging by the absence of recorded conflict between these family units and the social service agencies in the community.

Two of the girls bore children out of wedlock, 1 of whom married the child's father after the birth. The other continued to live in her parental home, and assumed financial responsibility for the child, while her mother assisted her in its care.

134 girls and 98 boys were still single. They participated in heterosexual social activities; and 67 of the girls were engaged, and planning on marriage after the war. They were reported by their recreational leaders to be well adjusted to their community, over 46% of the group being rated as "excellent" by these leaders, and another 45% as "good." Only ½% were thus rated as "poor."

Objective measures of adjustment. As in the in-school period, measures of personal, social, and intellectual behavior were taken at 18 month intervals, and these objective results from interval to interval were considered in addition to experiential activities in determining the degree of adjustment attained. The same testing schedule used in the in-school period was continued into the post-school period, without interruption. The 3rd retests were given 1½ years after the 2nd retests, which had marked the close of the period of special center attendance.

There were 3 post-school retests for Group I, 2 for Group II, and 1 for Group III. Thus, the final testings for Group I were taken 4½ years after special center withdrawal, and 7½ years after special center enrollment. For Group II, the final testings were taken 3 years after special center withdrawal, and 6 years after special center enrollment. For Group III, final testings were made 1½ years after special center withdrawal, or 4½ years after special center enrollment. Thus, 4 successive testings are available for the entire 254 individuals; 5 are available for 295,[39] and 6 are available for 100 individuals.[40]

The results of the 1st post-school testing indicated personal adjustment slightly above the average for their age group, but also slightly below the group measure obtained at the close of the in-school period. This trend downward was a marked one by the 5th interval, but by the next interval the direction had changed sharply upward again, so that the 100 who had 6 testings showed a high final post-school measure. Compared with norms for individuals of the same age, the mean raw scores on the Bernreuter B1N schedule for the 254 individuals tested at the 4th interval was equivalent to the 41st percentile; for the 195 tested at the 5th interval the mean score equalled the 56th percentile; for the 100 who were tested at the 6th interval, the mean score was equivalent to

[39] Two were missing from Group II at the final test: 1 had moved to another city; the other was deceased. In addition, 4 boys from Group I were in service at the 5th test interval.

[40] 10 additional boys were unavailable by the 6th interval because they were in the armed services.

TABLE 62

Means, sigmas, and corresponding national percentiles of Bernreuter B1N scores at each retest interval

Group	N	F_4 (N-254)				F_5 (N-195)				F_6 (N-100)			
		Range	Mean	Sigma	Per-centile	Range	Mean	Sigma	Per-centile	Range	Mean	Sigma	Per centile
I: Boys	70	−180:58	− 82.9	43.7	44	−188:145	− 85.7	81.9	44	−188: 82	−101.9	50.2	36
I: Girls	40	−260:42	−140.5	54.6	7	−284:254	−129.1	28.6	11	−254:245	−160.7	47.0	3
I: Total	110	−260:58	− 103.8	51.2	20	−284:254	−101.5	39.4	21	−254:245	−123.0	39.3	13
II: Total	91	−110:69	2.9	47.2	65	−121: 65	− 12.6	31.3	58				
III: Boys	32	− 93:41	− 20.5	39.1	72								
III: Girls	21	− 63:93	− .2	40.3	64								
III: Total	53	− 93:93	− 12.5	40.0	58								
Total Boys	102	−180:58	− 63.3	41.3	55	−188:145	− 85.7	31.9	44	−188: 82	−101.9	50.2	36
Total Girls	152	−260:93	− 35.2	43.9	47	−284:254	− 48.7	30.2	60	−254:245	−160.7	47.0	3
Grand Total	254	−260:93	− 46.5	42.7	41	−284:254	− 61.7	30.8	56	−254:245	−123.0	39.3	13

the 13th percentile.[41] Mean scores and their sigmas, and national percentiles corresponding to the respective mean scores at each interval, are listed in Table 62.

Although at the beginning of the study the girls showed a higher degree of maladjustment than did the boys, by the end of the study the direction of the difference had changed, so that while both boys and girls evidenced a very low degree, of the 2 the boys were higher. Thus, the greatest change in reduction of personal maladjustment in the post-school period continued to be made by the girls, as had been noted in the in-school period. By the 4th retest, the total group had dropped from the original percentile rank of 76, to a mean rank of 41.

TABLE 63

Change in numbers of persons in each decile classification at each test interval, according to adult norms for Bernreuter personality inventory

Decile	Per-centile Range	F_4	F_5	F_6
1	0– 9	33	34	44
2	10–19	26	28	35
3	20–29	22	21	9
4	30–39	28	27	4
5	40–49	24	24	3
6	50–59	42	15	3
7	60–69	14	7	2
8	70–79	39	24	0
9	80–89	24	15	0
10	90–99	2	0	0
N	0–99	254	195	100

To show the transition within the group from the original to the final post-school rankings, Table 63 has been prepared to show at each test interval the frequencies within each decile classification, based on the norms for adult men and women for the Bernreuter test.

[41] High percentile ranks (and large raw scores) on the Bernreuter B1N schedule are said to be indications of extreme behavior deviation.

The movement toward a predominance of scores in the lower deciles, noted in the in-school period, continued to an even greater degree in the post-school period. For the total group tested at the 4th interval, 31 were found to rank in the lowest 3 deciles, and slightly more than one-half in the lowest 5 deciles. Since high rankings are said to be indicative of severe aberration, the tendency downward to the lower deciles at the 4th, 5th, and 6th test intervals evidenced gradual growth toward desirable degrees of personality integration. This constant trend toward a lower central tendency is shown in Figure 13.

Results of the Willoughby Scales showed tendencies in emotional maturity to be similar to those evidenced by the Bernreuter Inventory. Percentile ranks for mean scores ranged from 26 at interval 4, to 37 at interval 5, and to 48 at the close of the 6th interval. Mean scores for each of the sub-groups are presented in Table 64.

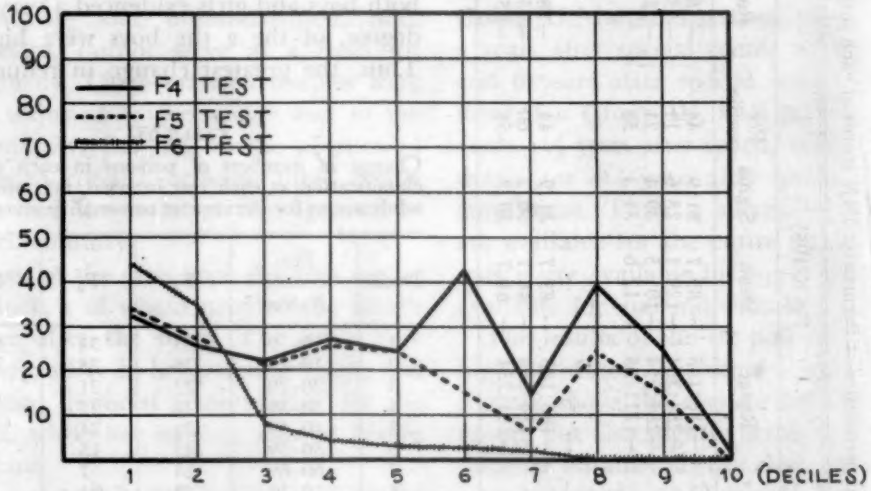


FIG. 13. Change in decile classification frequencies on successive retests on the Bernreuter B1N Scale during the post-school period.

A comparison of Figures 10 and 13 shows the nature of change in this area in the post-school period to be essentially the same as that which occurred in the first 3 intervals, during special center attendance. While at the close of the in-school period 37% ranked in the first 4 deciles, by the close of the post-school period 79% ranked in the first 2 deciles, with only 8% above the fourth.

A comparison of Table 64 with percentile rank at entrance according to the same scale shows an increase for the total group from the 2nd percentile at entrance, to the 48th at the close of the post-school period. Thus, in the area of growth in emotional maturity, the group moved from the most extreme inferior deviate behavior at entrance to a position of "average behavior," comparable to that of 50% of adults.

General social maturity, as measured by the Vineland Scale, also continued to improve, according to test results. At the close of the in-school period, the mean social quotient for the group was 91.8; by the conclusion of the study, it had

risen to 107.2. The data for each of the groups as well as for the total group, are shown in Table 65.

From the above table it can also be seen that the mean quotient for the total group for interval 4 was below that of the whole group at the close of the in-school period. Although in this 4th interval, which was the first of the post-school period, Group I showed increase over the testing at interval 3 (the close of the special center attendance), both Groups II and III showed decrease. However, by retest interval 5, Group II had risen again, although it had still not reached the social maturity level indicated at the close of the in-school period. Thus, at the close of the study, Group I was still improving; Group II was again improving, after its drop in the 4th interval; and, inasmuch as the 4th test interval marked the close of the study for Group III, that group had dropped in the last interval, although it still showed marked improvement over its status at entrance. All groups and sub-groups showed a gain at the close of the study over their original social quotients; all but Group III were continuing to improve at the last test interval.

Interval 4 marked the close of the first period during which the status of many of these individuals was moving toward a greater degree of personal independence than they had ever achieved before; toward which they had had opportunity

TABLE 64

Means, sigmas, range of scores, and equivalent national percentiles according to adult norms of Willoughby scale at each retest in the post-school period

Group	N	F_4 (N-254)				F_5 (N-195)				F_6 (N-100)			
		Range	Mean	Sigma	Per-centile	Range	Mean	Sigma	Per-centile	Range	Mean	Sigma	Per-centile
I: Boys	70	31–57	38.9	8.4	25	28–61	41.5	8.5	22	27–65	45.8	8.4	30
I: Girls	40	37–58	47.0	8.7	37	33–61	48.7	8.3	48	35–67	52.4	8.1	64
I: Total	110	31–58	41.8	8.5	32	28–64	44.1	8.4	30	27–67	48.2	8.3	48
II: Total	91	36–63	46.7	8.7	37	35–67	50.5	8.2	59				
III: Boys	32	19–52	36.8	9.1									
III: Girls	21	35–67	49.7	8.9									
III: Total	53	19–67	41.9	9.0									
Total Boys	102	19–57	38.2	8.6	25	28–61	41.5	8.5	22	27–65	45.8	8.4	30
Total Girls	152	35–67	47.2	8.7	37	33–67	49.9	8.7	53	35–67	52.4	8.1	64
Grand Total	254	19–67	43.2	8.7	26	28–67	47.0	8.6	37	27–67	48.2	8.3	48

TABLE 65

Changes in social maturity as measured by changes in Vineland social quotients at the close of each retest interval in the post-school period

Group	N	F_4 (N-254)			F_5 (N-195)			F_6 (N-100)		
		Range	Mean	Sigma	Range	Mean	Sigma	Range	Mean	Sigma
I: Boys	70	57–127	92.3	15.3	40–145	93.8	15.5	55–135	103.8	15.1
I: Girls	40	54–139	100.0	14.9	79–135	106.2	14.7	81–151	113.3	14.9
I: Total	110	54–139	95.1	15.1	50–145	101.5	15.2	55–151	107.2	14.9
II: Total	91	47–112	80.2	16.3	47–135	84.8	15.9			
III: Boys	32	69–110	84.1	14.7						
III: Girls	21	41–103	83.2	14.8						
III: Total	53	41–110	83.8	14.7						
Total Boys	102	57–127	89.7	15.0	40–145	98.8	15.5	55–135	103.8	15.1
Total Girls	152	41–139	85.8	15.4	47–145	90.8	14.8	81–151	113.3	14.9
Grand Total	254	41–139	87.4	15.3	47–145	93.6	15.2	55–151	107.2	14.9

to strive. The choice between continued voluntary education or full-time employment; the responsibility of leisure-time pursuits; the achieving of legal maturity; the expansion of social and sexual interests and the personal responsibility for emotional maturity, all of these were maturation factors operating in this 4th interval more significantly than in the previous intervals because of the physical (and chronological) growth and development of the individuals.

Throughout the post-school period, improvement in general social adjustment was evidenced by the increase in the total scores on the Detroit Adjustment Inventory. While this inventory is primarily diagnostic, and no normative values are available for comparison with accepted standards, some idea of improved adjustment can be seen from the gain in raw score, alone, within the minimum score of 120, and the maximum of 600. From a mean raw score of 162 at entrance, the group mean rose to 438.8 at the close of the study. The distribution of the significant measures for each of the groups is shown in Table 66.

As in the analysis of other tests, it must be remembered that test interval 4 was the close of the post-school period, for Group III; test interval 5, for Group II; and only Group I was given 6 testings. Thus, final post-school adjustment for Group III was measured by a gross raw score of 385.3 (of a maximum possible 600) at the close of 1½ years after leaving the special centers. Group II showed a gross score of 448.4 (also out of a possible 600) after a 3 year post-school period. And at the close of the 6th interval, the end of 4½ years in the post-school period, Group I showed a gross score of 438.8 points.

TABLE 66

Changes in social adjustment in the post-school period, as measured by changes in raw scores on the Detroit adjustment inventory at each retest interval

Group	N	F_4 (N-254)			F_5 (N-195)			F_6 (N-100)		
		Range	Mean	Sigma	Range	Mean	Sigma	Range	Mean	Sigma
I: Boys	70	155–238	211.8	22.3	193–533	423.7	21.6	232–541	451.6	22.3
I: Girls	40	149–223	202.8	19.1	310–427	385.3	20.4	139–462	416.4	21.0
I: Total	110	149–238	209.2	20.7	193–533	409.8	20.7	139–541	438.8	20.5
II: Total	91	81–230	203.5	19.2	310–520	448.4	20.3			
III: Boys	32	136–513	358.4	24.1						
III: Girls	21	314–526	426.4	17.6						
III: Total	53	136–526	385.3	21.5						
Total Boys	102	136–513	258.7	23.7	193–533	423.7	21.6	232–541	451.6	22.3
Total Girls	152	149–526	233.9	18.4	310–520	425.3	20.3	139–462	416.4	21.0
Grand Total	254	139–526	243.9	21.2	193–533	425.1	20.7	139–541	438.8	20.5

Changes in intelligence quotients also continued to be made in the post-school period, as found by the periodic retests. Continuous and consistent gain was evidenced by each group. By the close of the study, the intelligence quotients of none of the individuals were below 50, and 60% were classifiable in the low or high normal range, with IQ's between 90 and 110. The gradual emergence of these individuals from one classification group into the next is shown in Table 67.

By the 4th test interval, 81.6% of all individuals in the study could no longer be classified as feebleminded, and of this group, 16% were in the normal range of intelligence, and 35.2% were classifiable

as "dull," with IQ's in the 80's. By the 5th interval, of the 195 for whom that interval marked a post-school period of 3 years, 33.8% were in the normal range, and another 30.6% were in the "dull" classification. Of the 100 who were studied for a 4½ year post-school period, 59.7% were in the normal range by the end of the 6th test interval, while an additional 26.7% were in the "dull" group.

Although at the beginning of the study over 53% of the persons included were found to be in the "imbecile" or "low moron" classification, on the basis of intelligence, by the close of the study, only 2.7% were found to have IQ's between 50 and 57, and none were below that level. At the other end of the scale, 86.4% ranked in the "dull" or "normal" levels. Only 7.2% of the group remained as "feebleminded" at the close of the study. The change in IQ's for each of the groups are presented in Table 68.

At the close of the 4th interval, or 4½ years after enrollment in the special centers, 48% had shown gains of 30 or more IQ points; 13.9% gained 40 or more points; and 4% gained 50 or more points. Of the 195 retested at the end of 6 years, 57.2% showed a gain in IQ in excess of 30 points; 27.1% gained more than 40 points; and 7.5% had gained more than 50 points. At the end of 7½

TABLE 67

Change in numbers of persons in each of Terman's groups at each test interval

Classification	IQ Range	F_4 (N-250)		F_5 (199)		F_6 (N-109)	
		Number	Percentage	Number	Percentage	Number	Percentage
Idiot	0–24						
Imbecile	25–49	3	1.2	1	.5		
Low Moron	50–57	5	2.0	4	2.0	3	2.7
Middle Moron	58–62	11	4.4	8	4.0	2	1.8
High Moron	63–69	27	10.8	7	3.5	3	2.7
Borderline	70–79	76	30.4	51	25.6	7	6.4
Dull	80–89	88	35.2	61	30.6	29	26.7
Low Normal	90–99	36	14.4	56	28.2	36	33.0
High Normal	100–110	4	1.6	11	5.6	29	26.7
Total	0–110	250	100.0	199	100.0	109	100.0

TABLE 68

Changes in intelligence as measured by changes in Stanford-Binet IQ's at each retest interval in the post-school period

Group	N	F_4			F_5			F_6		
		Range	M	Sigma	Range	M	Sigma	Range	M	Sigma
I: Boys	70	44–95	79.1	8.3	50–102	84.4	8.5	61–110	91.7	9.5
I: Girls	40	40–95	75.1	9.1	48–103	79.3	8.7	50–110	85.2	9.1
I: Total	110	40–95	77.7	8.7	48–103	82.5	8.9	50–110	89.3	8.9
II: Total	91	57–101	78.4	8.2	51–109	83.8	8.0			
III: Boys	32	61–102	83.5	7.3						
III: Girls	21	53–101	82.1	7.7						
III: Total	53	53–102	83.0	7.5						
Total Boys	102	44–102	80.6	7.9	50–102	84.4	8.3	61–110	91.7	9.5
Total Girls	152	40–101	78.1	8.1	48–109	82.4	8.2	50–110	85.2	9.1
Total	254	40–102	79.1	8.0	48–109	82.7	8.2	50–110	89.3	8.9

years, of the 100 retested at that interval, 80.7% exceeded a gain of 30 IQ points; 59.6% exceeded a gain of 40 points; and 29.3% reached or exceeded a gain of 50 points. The mean overall gain in IQ for the entire group was 40.7 points at the close of the study. In Table 69 are detailed the range and mean change for each group at the 3 retest intervals, each of which marked the final testing for one of the groups under study, in comparison with test performance at the beginning of the study.

TABLE 69

Over-all change in IQ at each post-school retest interval

Group	F_4 (N-254)		F_5 (195)		F_6 (N-100)	
	Range	M	Range	M	Range	M
I: Boys	2:53	31.5	7:62	36.7	−1:71	44.1
I: Girls	−3:52	23.3	−3:50	27.5	3:59	33.8
I: Total	−3:53	28.5	−3:62	33.6	−1:71	40.7
II: Total	−3:59	24.1	−4:64	29.6		
III: Boys	−2:43	25.4				
III: Girls	1:55	37.2				
III: Total	−2:55	30.1				
Total Boys	−2:43	29.6	7:62	36.7	−1:71	44.1
Total Girls	−3:59	26.0	−4:64	29.0	3:59	33.8
Grand Total	−3:59	23.5	−4:64	31.8	−1:71	40.7

The above table shows the continuous positive change for Groups II and I as study of them was carried through additional 5th and 6th retest intervals, respectively. It also shows the comparable mean change for all groups in the study at any of the 3 post-school periods. The range of points of over-all change for the entire study was from a drop of 4 points to a maximum positive change of 71 points.

Three persons showed an over-all drop in IQ in the study, in comparison with their initial test performance. Of these 3, 1 dropped 1 point; 1 dropped 3 points; and 1 dropped 4 points. There was no IQ loss in excess of 4 points. Moreover, only 8 persons showed an over-all gain of less than 10 points.

In the measures of adjustment detailed above, absolute differences of varying degrees are apparent between groups within the study, and between the total group of boys as compared with girls. To show the significance of these differences, critical ratios between the groups at each post-school interval are presented in Table 70.

From the above table it can be seen that the boys differed very widely from the girls in personal and social adjustment at interval 4, but converged toward similarity at interval 5. By the close of the study, however, there was again extreme variance between boys and girls. In intelligence, no significant difference was found between the boys and the girls in the study until the close of the study, when an absolute difference of 6½ points was noted between the mean IQ for the boys as compared with the girls.

Between groups within the study, there was very little similarity in degree of adjustment according to objective measures by the close of any one post-school interval. This wide variance between groups within the study is in marked contrast to the close similarity between these groups in each of these areas at entrance (see Table 38) where

TABLE 70

Critical ratios of measures of adjustment between Groups I, II, and III, and between total boys and total girls as measured by selected tests at each retest interval in the post-school period

Test	I:II	II:III	I:III	Boys:Girls
(a) Retest Interval F_4				
Stanford-Binet	.59	.55	3.31	2.45
Vineland	6.78	1.36	4.55	2.01
Detroit Adjustment	2.00	5.09	4.96	3.36
Bernreuter B_1N	17.10	2.29	15.80	5.01
Willoughby Emotionality	4.08	3.13	.07	6.12
(b) Retest Interval F_5				
Stanford-Binet	1.08			.99
Vineland	7.52			.13
Detroit Adjustment	13.54			.48
Bernreuter B_1N	20.50			1.73
Willoughby Emotionality	5.42			6.77
(c) Retest Interval F_6				
Stanford-Binet				3.00
Vineland				.06
Detroit Adjustment				8.51
Bernreuter N_1B				10.52
Willoughby Emotionality				4.09

TABLE 71

Critical ratios between test performance indices of adjustment at the close of each retest interval in the post-school period, as measured by selected tests for Groups I, II, and III, and for the total group

Test	Group I			Group II		Group III	Total		
	$F_4:F_3$	$F_5:F_4$	$F_6:F_5$	$F_4:F_3$	$F_5:F_4$	$F_4:F_3$	$F_4:F_3$	$F_5:F_4$	$F_6:F_5$
Stanford-Binet	5.31	4.00	5.66	4.77	4.46	4.22	9.34	4.44	5.72
Vineland	3.30	3.10	2.77	*5.40	1.92	*1.63	*2.82	4.20	7.37
Bernreuter	2.46	.41	5.43	5.24	1.91	2.07	3.62	4.40	1.61
Willoughby	4.40	2.00	3.59	8.75	3.06	3.17	3.29	4.36	1.06
Detroit	7.26	7.10	10.50	8.03	8.40	5.26	8.52	8.34	3.22

* Change in direction.

the difference in performance was very small, except between Groups I and II, on the Bernreuter schedule; and between Groups II and III on the Pintner and Willoughby Emotional Maturity Scales. However, it must be reiterated that these statistical measures are fallible to the extent of unreliability or invalidity of the basic measures. The objective measures are to be considered only in conjunction with experiential data presented earlier.

In Table 71 are detailed critical ratios between test performance at each of the post-school intervals with its prior interval. Ratios between the first post-school test and the last in-school test are designated as $F_4 : F_3$; between the 2nd

and 1st post-school test, indicated by F_3:F_4; and between the 2nd and the last post-school test, F_6:F_8.

Throughout the study, gains in adjustment continued to be made. However, greatest improvement in all areas of behavior in the post-school period was made in interval 4, or the period immediately following special center withdrawal. In the 5th interval, greatest improvement was made in social adjustment, although marked gains in other areas continued. By the final 6th interval, only slight gains were found in the measures of neuroticism and emotional maturity, but improvement in social adjustment and intelligence was greater in that interval than in the 5th. Particularly in the 5th interval change in all areas of behavior being studied were noticeably similar.

SUMMARY OF CHANGE IN THE POST-SCHOOL PERIOD

The 5 year post-school period found little gross change in the community backgrounds of the families in the study, although there were numerous specific changes of residence. Some improvement in economic status and an increased degree of self-sufficiency were evident, due in part to a changed national economic picture, and partly to the emergence of the individuals in the study, themselves, to the status of employable men and women.

The personal and social adjustments of these individuals continued to be marked by participation in community, social and civic activities, and by a desirable range and concentration of individual leisure-time interests. In addition, their voluntary continuance in school, and their success in getting and keeping employment evidenced their social maturity and satisfactory personal adjustment, further corroborated by minimal contacts with public welfare or other social agencies.

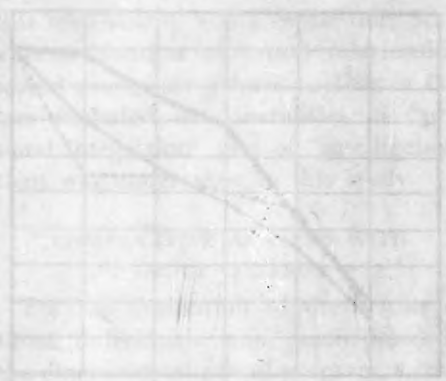
At the close of the study, slightly less than 27% had completed a 4 year high school course, and 5.1% had continued post-high school training. Fifty-one individuals, or 20.1%, were still in school attendance, either through full-time day attendance or through attendance at night school, or special extension attendance, at the close of the period of investigation.

At the closing date, 83.4% were regularly employed; 5.9% were in military service; 3.5% were girls who had married and gave their full time to homemaking; 3.1% were temporarily idle; and 2.4% were in fulltime school attendance. Only 1 person could be classified as "permanently idle," having never been employed, nor in any voluntary school attendance. Two had died during the course of the study.

Fifteen girls in the study, and 3 of the boys, were married by the closing date and were maintaining financially independent family units. Four families had 1 child each; 6 had 2 children; and 1 had 3. The ages of the children ranged from 4 months to 4 years. There was only 1 inter-marriage within the groups included in the study. These family units were considered as satisfactorily adjusted, both within their family and to the community.

On the basis of experiential activities and results of objective measures, gains in adjustment, begun in the in-school period, were observed to continue in the post-school period. While the greatest improvement in this post-school period, which occurred in the first 18 months after special center withdrawal, was not as great as the greatest gain in the in-school period, it was

nevertheless an important one, and gains of similar magnitude continued to be made up to and including the closing date of the post-school period. By the end of the post-school period, 59.7% of the total group were classifiable as low or high normal, in intelligence. Another 26.7% were in the group classifiable as "dull," with intelligence quotients in the 80's. Only 7.2% or 8 individuals were still feebleminded. The average adjustment of the total group in all areas was equal to or almost better than that of the average adult, according to objective measures, and this conclusion was corroborated by their achievements in academic, vocational, and social activities.



Chapter VII

Interpretative Analysis of Changes in Behavior Following Placement

The change in behavior of the total group following special center placement can best be interpreted by a summation and integration of such change in the in-school and the post-school period, and a comparison with that change for the group and individual controls. Because the experiential activities were continuous and cumulative, they can be interpreted from the summaries which have been made earlier. However, the change in test performance throughout the evaluation period can best be analyzed through a recapitulation of the data both in the in-school and post-school periods. The mean scores for each of the selected objective measures for each group are detailed in Table 72.

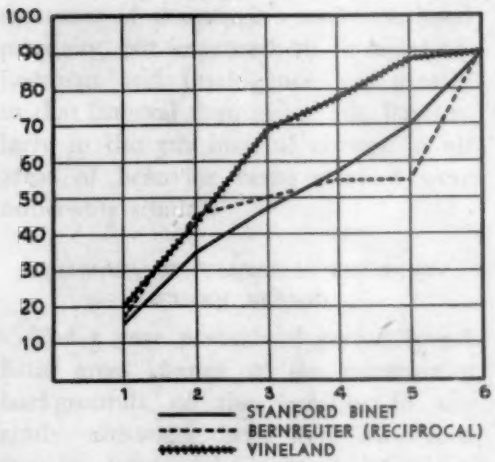


Fig. 14. Change in personal, social, and intellectual behavior from special center enrollment to the close of the study according to group percentile rank at each test interval.

Figure 14 illustrates the similarity of growth curves in the areas of social and intellectual behavior, throughout the study. Personal behavior approaches this similarity in all but the 3rd interval, where comparatively little growth is shown between the 3rd and 4th tests, changing the nature of the curve at that point. However, following the 4th test, the curve again takes on a character similar to the other two.

Another method of summarizing and analyzing the over-all change from enrollment to the end of the study is found in the critical ratios which their final test performance bears to performance on related measures at other periods in the study. In Table 73 these ratios are presented for each of the groups.

The ratios tabulated above show the marked but progressive change in each of the areas of behavior under investigation, from the beginning of the study to its close. Particularly in the measures of intelligence and personal behavior, not only significant differences are apparent throughout, but differences which are obvious in absolute values.

In addition to these summaries of change in percentile rank and in critical ratios, another aspect of the analysis of growth found is the coefficients of correlation between change in each of these areas with each other. For these purposes, the basic data used were the change in raw scores on measures of personal and social behavior, and change in Stanford-Binet intelligence quotients. These Pearson coefficients are given in Table 74.

According to these coefficients there appears to be a high relationship between the change made in intelligence and in social maturity and personality integration, according to this measurement of these factors by Stanford-Binet,

TABLE 72

Mean scores for each standard measure at entrance, (1), at close of in-school period, (2), and at the close of post-school period, (3).

Group	Stanford-Binet			Vineland			Bernreuter			Willoughby			Detroit		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
I	50.5	71.6	89.3	60.3	87.4	107.2	32.0	−83.6	−123.0	27.2	37.0	48.2	155.0	193.1	438.8
II	54.4	72.0	83.8	59.1	94.1	84.8	76.0	33.2	− 12.6	14.6	37.6	50.5	93.7	201.0	448.4
III	47.7	76.2	83.0	64.7	89.3	83.8	52.0	2.8	− 12.5	19.7	37.2	41.9	142.8	266.1	385.3
Total	52.1	71.6	89.3	59.4	91.8	107.2	52.0	−27.2	−123.0	19.8	36.3	48.2	123.1	243.8	438.8

Vineland, and Bernreuter scales. Some relationship is shown between change in intelligence and change in general social adjustment and emotional maturity, but this is of only a moderate degree.

While this analysis of correlations found between change in each of the areas of behavior studied indicates that, in general, in the individuals in this group, those persons showing the greatest change in intelligence also showed greatest change in personal integration, it cannot be concluded, necessarily, that this relationship was a causal one. Such a determination of causal relationship would necessitate a finer analysis of factors included in generalities of "personal integration" and of "intelligence" than was undertaken in this study.

COMPARATIVE ANALYSIS WITH GROUP CONTROL

For the evaluation of the results of those individuals who participated in the experimental school program, a comparison must be made with the Control group with which they were matched. The process of equating, and the Control group which was so effected, has been described earlier (Chapter II).

At the beginning of the study, the mean IQ for the Control group was 60, as compared with 55.3 for the Experimental group. All were in their 12th year, chronologically; all had been in school attendance slightly more than 6 years, and their composite achievement level was in the 1st grade level. Their socio-economic ratings were practically identical.[42] All children in the Control and Experimental group were girls.

[42] The critical ratio of their socio-economic rating, between the equated groups, was .1; CR's for other equated variables are given in Table 2, Chapter II, p. 10.

For these 2 groups, a summary of experiential activities was reported at the end of a 5 year period following special center enrollment, which included their achievement in the special center at the time of withdrawal, their voluntary education following the period of attendance at the special center, and their post-school adjustment to their family, to the community, and in employment. At the close of this 5 year period, retests of intelligence were made for comparisons with such test performance at entrance to the special center. These experiential activities and test results can be compared with those of the Experimental group taken at the corresponding periods.

Experiential activities. At the close of the in-school period, the Experimental group showed a range in reading from 2nd to 10th grade, with a mean achievement at the end of the 5th grade. Their mean composite achievement was at the beginning of the 5th grade. For the Control group, mean reading achievement was at the 3rd level, and mean composite achievement was advanced 3rd grade. These mean achievement levels, and the deviations which they represented from expectancy, based on their IQ's at en-

TABLE 73

Critical ratios between test performance indices of intelligence, social maturity, and neuroticism at the close of the post-school period, and at enrollment and the close of the in-school period

Test	Group I			Group II			Group III		
	$F_0:F_2$	$F_0:F_1$	$F_2:F_1$	$F_2:F_2$	$F_2:F_1$	$F_2:F_1$	$F_4:F_2$	$F_4:F_1$	$F_2:F_1$
Stanford-Binet	12.46	25.36	12.50	8.87	24.09	13.54	9.34	15.84	15.00
Vineland	8.68	19.71	10.00	*3.64	11.67	12.10	2.82	6.82	6.13
Bernreuter B_1N	5.56	15.04	9.69	8.80	21.15	8.92	3.62	6.20	4.87
Willoughby	10.46			4.08	39.45	20.90	3.29	19.47	15.90
Detroit	13.82	26.43	18.29	5.94	11.62	6.31	8.52	8.83	3.25

* Change in Direction.

TABLE 74

Pearson coefficients of correlation between over-all points of change on selected measures of personal, social, and intellectual behavior with each other

	Bernreuter B_1N	Vineland	Willoughby	Detroit
Stanford-Binet	.923 ± .029	.874 ± .008	.521 ± .015	.614 ± .019
Bernreuter B_1N		.428 ± .003	.265 ± .031	.492 ± .026
Vineland			.861 ± .004	.507 ± .035
Willoughby				.839 ± .014

TABLE 75

Mean reading and composite achievement levels for experimental and control groups at the close of the in-school period, and deviation of such achievement from expectancy

Group	Mental-age Grade Expectancy	Grade Level	Reading Deviation From Exp.	Composite Grade Level	Deviation From Exp.
Experimental	2.0	5.9	3.9	5.0	3.0
Control	3.6	2.2	−1.4	1.9	−1.7

trance, are shown on Table 75.

According to this table it can be seen that the Experimental group far exceeded its mental-age-grade-expectancy, calculated according to the intelligence quotients on record at the beginning of the study. This excessive positive deviation shows a marked absolute difference over the negative deviation of the Control group.

Of the total 68 included in the Control group, none merited certificates at their special center withdrawal, nor did they continue any voluntary education after such withdrawal. Nine persons, or 13.2% were employed at some time in the post-school period; the average duration of such employment was 3 months. Of these 9, 6 were in domestic service, 2 were employed as sales clerks; and 1 as a counter girl in a restaurant. This employed group was earning a mean weekly wage of $8.75.

Eight of the girls bore children out of wedlock, of which all were still living in their home community area at the close of the 5 year period. Of these 8, 7 were financially dependent on public agencies for the care of themselves and their child. The 8th was a girl who lived with her mother and was herself employed. While she was dependent in part on public funds for support, she was reported by social agencies as making a good adjustment to her personal problem, to her home, and to the community. Three of the girls had married and were maintaining independent homes.

Of the 64 girls in the Experimental group, 23 earned certificates by the close of the in-school period, and 57, or 88%, continued voluntary education in the post-school period. Of this 57, 19 were in full or part-time high school attendance at the end of the 5 year investigation period.

From this Experimental group, 54 were employed in the post-school period. The mean duration of their jobs was 9.7 months; they were employed in domestic service, as typists and general office clerks, and in retail selling. Seventeen of these employed persons were given training by their employers to enable them to prepare for more skillful occupations. Most of this "on-the-job" training was in general office work, and included training in typing, filing, and bookkeeping. However, individual cases were also given opportunity to learn such skills as coilwinding, blue print etching, and power press operating. The average weekly wage of the employed girls from the Experimental group was $16.25.

One girl bore a child out of wedlock, and subsequent to the birth, married the father of the child. At the close of the investigation period, the family unit was considered to be well-adjusted to the extent that no family or community conflicts had been reported by social service agencies. Ten girls had married and were giving their full time to home-making. At the close of this 5 year period, none of the girls were employed after marriage.

Some comparison of the general personal and social adjustment of the Experimental and Control groups can be had by an analysis of the reliance of each of these groups upon community social service agencies. Such an analysis is presented in Table 76.

According to this table, the recorded conflicts with family or community, as evidenced by Juvenile Court and Behavior clinic records, were fewer for the Experimental group than for the equated Control group. All court charges were cases of sexual delinquency, frequently combined with incorrigibility at home, truancy from home,

and, in 2 cases, with larceny. Of the 4 records of institutional placement, 3 were in state hospitals for the insane, and 1 in the state hospital for the feebleminded. All 4 were in institutional residence at the conclusion of the period of investigation.

Retests of intelligence. The Control group was given a Binet retest at the close of the 5 year period, in order to determine such change as might be found to have been made since their test and enrollment. The Experimental group was retested at the same calendar period, which was the 4th test interval in the long-term study of the entire group from the experimental centers. The results of these intelligence retests are given in Table 77.

From this table it is apparent that within the 5 year period included in this investigation the experimental group moved out of the classification of "feeblemindedness," almost into the "dull" classification. At that point, 11 of the group were already testing in the normal range, 1 in the high normal, between 100 and 110. Only 1 person tested below an IQ of 60. Comparison with original tests indicated, that, by this 5 years after original enrollment, 40.6% had already shown gains of 30 or more IQ points. There were no evidences of loss in any case at this point in the study; only 3 individuals showed gains of less than 10 points.

On the other hand, the Control group was marked by decrease in IQ, with only 4 of the total 68 showing gain, and such gain not greater than 4 points. Most of the IQ losses were slight, but there were individual losses as great as 20 and 22 points. The mean change over the period for the Control group was a loss of 3.6 points, as compared with the 25.2 points gain shown by the Experimental group.

The Binet retest test data here pre-

TABLE 76

Contacts of community social service agencies with experimental and control groups

Types of Agencies	Groups			
	Experimental		Control	
	Number	Percentage	Number	Percentage
Medical clinics and hospitals	3	4.5	6	8.7
Behavior clinics	0	0.0	5	5.9
Juvenile Court	1	1.5	16	23.5
Special schools and institutions	0	0.0	4	2.9
Totals	4	6.0	31	45.5

TABLE 77

Comparative ranges, means, and sigmas of Stanford-Binet intelligence quotients at entrance (F_1) and at close of five year interval (F_4) for experimental and control groups

Group	F_1			F_4			Change	
	Range	M	Sigma	Range	M	Sigma	Range	M
Experimental	37–69	55.3	10.3	49–109	79.1	10.7	+9:+60	+25.2
Control	46–69	60.0	9.7	44–68	56.4	10.3	−22:+4	− 3.6

sented appears to substantiate the quality of experiential activities recounted for the Experimental group earlier in this chapter, and also to help explain the difference in quality and extent of these experiences over those of the Control group.

The decrease in IQ noted in these retest data is in accord with the findings of other studies of children of low IQ, where no special environmental change was introduced, either in the family or the school. Kephart found that mentally retarded children (high-grade morons and borderline defectives) sustained a mean loss as high as 3 points per year under unfavorable environmental conditions in institutions. (35: 223-230) Likewise, Crissey concluded, from his study of a large number of children in relation to length of institutional residence, that loss in IQ increased in relation to the duration of such residence. (19) The study of a group of mentally deficient boys, made by Phillips, (39) also noted that in IQ retests, a small number of cases showed increase; a large number showed decrease; and a still larger number showed no change.

The account of experiential activities also is in conformity with reports of follow-up studies of mentally deficient children after leaving school, as reported by Baller, (1) and by Glickman. (55) Baller found greater percentages of illness and higher mortality rate in those classified as mentally deficient, than in the average adults who comprised his Control group. He also found an absence of educational achievement beyond the "opportunity room"; higher police-court records; occupational instability; and a higher rate of economic dependence.

Glickman reported the post-school careers of special class pupils, of whom, however, most were classifiable as dull-normals, rather than feebleminded. He found less than 20% were regularly employed, and such employment as was found was in helper class of services, at a median salary of $7.33 per week. More than half of the girls were unmarried mothers, and more than a third of the boys had delinquency records.

However, Stoddard points out, in his discussion of concepts of feebleminded-ness, (42: 288) that such studies as have been reported have been accounts of what has happened without benefit of significant cultural changes in the environmental situations. Reports of such introduction of change in program, and accounts of subsequent change in behavior, are few. Among those recorded is the experiential account of the group of children at Locust Point, whose activities 17 years after leaving the community was reported by Fairbank. (5) While the general social adjustment of these individuals showed excessive conflict with the courts and other social agencies, their economic adjustment itself was good, and three-fourths of the group were found to be self-supporting.

In addition, Kephart (35: 228) found gains of from 2 to 22 IQ points in a small group of 15 to 18 year old boys, following a specialized institutional program, which had been in operation 1½ years at the time of his report. The average IQ at the beginning of the program was 66.3; at the end of the study it was 76.4. 50% showed an increase of 2 or more points, and 25% gained 15 or more points. While the number of cases on which these data are available is small,[48] the change noted is definitely in agreement with the results of the Experimental group in the study now being reported.

[48] Only 16 children were included in Kephart's study, all boys.

The findings of the Experimental and Control groups in this study appear to be in conformity with other related studies in the field. In general, they point up a difference in final status between children originally of similar mental and chronological status, coming from homes and communities that were very comparable, but participating in differing school environments. These results would seem to give added evidence for Kephart's conclusions that "specialized programs can be effective in producing a significant rise in IQ:" (35: 230)

INDIVIDUAL CONTROLS: COMPARISONS OF IDENTICAL TWINS

In addition to the comparison made possible by Experimental and Control groups, some individual evaluations were made possible by a study of twins included in the investigation. 4 such sets were included, wherein 1 of each pair was in the Experimental group, and the other in the Control group. All were girls, since the equated Control group was of girls only.

Of the twins in the experimental study, 2 were from Group I, and 1 each from Group II and Group III. The reason for placement of one in the experimental centers, and one in the control, in each case lay in the fact that it was considered desirable for them to be separated because of a growing dependence each on the other. Their placement in the special centers dated from approximately the same period, with a maximum difference of 6 weeks in date of enrollment.

Twins Paired Between Experimental and Control Centers

Pair Number 1: The R. twins lived in a community of very low economic classification, which ranked as average throughout the city on the basis of rate of delinquency. They were the only children of a relief family. Both mother and father were in good health; both were high school graduates. The home was mono-lingual, and although neither the parents or children had personally-owned books, the mother occasionally borrowed books from the library, the father read occasional popular magazines, and the daily newspaper.

Both Jessie and Jacqueline enjoyed "helping mother clean house," but Mrs. R. confided that it was difficult for her to let them do so, because they performed the tasks so incompetently. Jessie liked to look at comic books in her leisure-time, but Jacqueline preferred to sit on the steps and watch the neighborhood children at play. She never played with these children, nor was she included in their plans.

Both girls were excessively shy and retiring, on immediate observation. They seemed content to be with each other, with no desire for play or work with other children. They were polite to adults, but appeared to answer questions merely because it was expected that they should. They were reported by their teacher as being "unable to read very well," although both were in the beginning semester of 5th grade. According to school records they were "well-behaved" in the class-room; their only problem was an inability to learn. Jacqueline was reading at a poor 1st grade level; Jessie was able to use an easy 2nd reader, but with difficulty.

Both girls were referred for examination by the placement bureau and were given the Stanford Revision of the Binet-Simon Test one month apart. Jessie was 13 years and 7 months chronologically. She was found to have a mental age of 8 years and 2 months, with an IQ

of 61, and was recommended for placement in Center E.

In the special center, Jessie was given little opportunity for the improvement of reading and academic skills, since it was believed she was achieving at a level very close to her expectancy, according to her mental test results. She was given opportunity to learn rug and basket weaving and some "stitching," or needlework. 5 months after her placement, Jessie began to be truant from school, and upon repeated offenses and reprimands from her mother, left home and was placed temporarily in the Juvenile Detention Home, from which she was returned to her home and school, following an advisory hearing in Juvenile Court. She continued school with no further truancy, for a year and 3 months, when she dropped out of school and refused to continue. Because she was then 15 years and 3 months of age, and would be beyond the Compulsory School Attendance Law at the end of the term, her continued attendance was not insisted upon. Upon her cumulated school record, she was reported to have a composite academic achievement level of 3.8.

After leaving the special center, Jessie did not continue any voluntary education, nor was she successful in getting employment. While she often expressed a desire to "get a job", she seemed unable to approach the problem of looking for work. She helped her mother in keeping house, but beyond that she spent most of her time at the movies. Jessie appeared to continue her withdrawal tendencies, finding in the screen world a world of phantasy of her own. At the close of the 5 year investigation period, Jessie's intelligence retest yielded an IQ of 55, a drop of 6 points over the initial IQ.

Jacqueline was examined 1 month before her sister and was found to have an IQ of 42. She was chronologically 13 years and 6 months, with a mental age of 5 years and 4 months. She entered Center A, the 1st time she had been in school without her sister. Shortly after her enrollment, it was noted that she was most unhappy and fearful; she seemed afraid to trust herself to attempt even very simple tasks. On the Vineland measure of social maturity, she was found to have a social quotient of 74, and on the Bernreuter scales her scores ranked at the 67th percentile of neurot icism, and the 80th for introversion. Her schedules bore out statistically what her daily behavior in the classroom indicated. According to results of the Willoughby Emotional Maturity Scale, she presented excessive immaturity, ranking at the 6th percentile for children of her same age.

An analysis was made of Jacqueline's academic skills, and it was found that her reading achievement was practically nil. She had no sight recognition vocabulary, and attempted to "sound out" each word she met, even at the pre-primer level. She was easily fatigued by such a procedure, and seldom experienced the joy of reading even a short selection. Her entire language program was undeveloped, and her arithmetic skills did not go beyond simple counting.

Jacqueline was encouraged to participate in some group activities within the room, even though at first she was primarily an observer. Her first attempts at group work were brought about in the making of stereopticon slides. The materials needed, i.e., the glass, the water colors, the tape, were set at various places around the room, and the children were told to go ahead with their first attempts, after they had seen some slides made by other children, and had had the techniques explained to them. Jacqueline hesitated.

appeared as if she would get up to get the materials, then sat back again, passively. A little later she repeated the gesture; finally she turned, very uncertainly, to the teacher.

"Do you mean I should walk over and get the glass myself?"

Upon being assured she was to move freely about, get the necessary materials, seek help as it was needed, she scampered over, and was soon on her way. Gradually from that point she gained more assurance, and, although she frequently showed extreme caution in exercising initiative in her work at school, she became increasingly more confident until she contributed most freely to projects and activities.

Her skill in the tool subjects increased, and her interest in reading was particularly noticeable. By the last term of her special center attendance, she was president of the Book Nook Club, the "reading circle" of the center, and enjoyed discussions with other members of the club of the books they had read. After finishing Mukerji's *Gay Neck*, she returned for another book, "by the same man, 'cause in *Gay Neck*, one reason I liked it was I could almost see the pictures when there wasn't any."

Three years after enrollment, Jacqueline graduated from the special center, and transferred immediately to the 8th grade from which she was awarded her elementary certificate at the end of that same term. Following her graduation, she secured a position as a packer in a candy company, earning $23 per week. After she had been employed in this position slightly more than a year, she was made inspector in the shipping department, at a weekly salary of $35 per week. She was still so employed at the close of the 5 year period.

A little less than a year after completion of her elementary education, Jacqueline entered an academic high school, attending in evening sessions. She was still in attendance at the close of the study, being classified at that time as completing her junior year in a commerce curriculum.

On the successive measures of neuroticism (on the Bernreuter Scale), Jacqueline's percentile rank changed as follows: 66th; 63rd; 32nd; 4th; and 5th. Introversion measures, also on the Bernreuter Scale, had dropped from 79th; to 61st; to 17th; and, finally, to 12th. Her Stanford Binet retests rose steadily from 42, to 68, to 70, to 84, and, finally, 5 years after the beginning of the study, to 89.

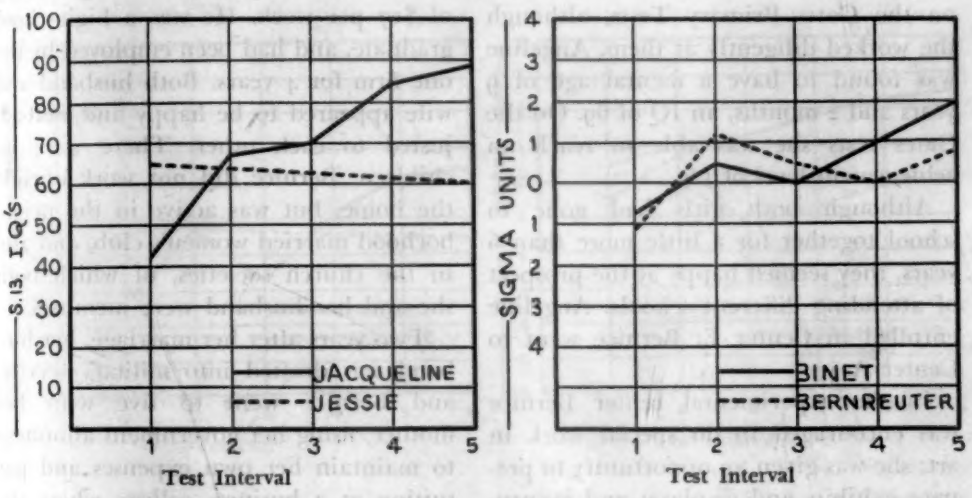
Jacqueline's curves of growth in each of these areas of behavior have been shown in the accompanying graphs in Figure 15.

These figures show a steady rise in IQ for Jacqueline from the time of special center enrollment, until the end of the study. Because only 2 measures of intelligence are available for Jessie, it is impossible to determine the character of her mental growth curve between the initial and final dates of the study, but the final IQ shows a drop of 5 points, a change as possibly due to chance differences in the testing situation as to any change in intelligence, itself. According to the curve by sigma units, Jacqueline's change in neuroticism tendencies (and introverted behavior), closely paralleled her change in intelligence, for the first 3 intervals, which are the in-school period. During intervals 4 and 5, her growth in these areas was slower than her growth in mental ability, although she continued to gain in all areas. The final interval of the post-school period was marked by sharply increased gain in personal behavior once more, reaching at

that interval the same point as her change of intelligence. There was continuous gain in both personal behavior and mental test performance; the rate of gain was slightly more constant in the latter.

Pair Number 2: The J. family lived in an area of very low economic classification, and had been on relief for a 6 month period, but were not financially dependent at the beginning of the study. There were five children: Rose; Helen; the twins, Angeline and Bernice; and John, who was 1 year younger than they. Rose and Helen were children by Mrs. J.'s 1st marriage, and were, respectively, 11 and 2 years older than Angeline and Bernice. Rose was married and out of the home at the time the 2 girls were enrolled in the special centers. The twins were born out of wedlock, just prior to the marriage of their mother to Mr. J. They, as well as John, born a year later, were the children of both parents.

Both girls were in good health, and were without physical handicaps. Two years earlier, both girls and John had been under treatment for tuberculosis, but had been dismissed from the clinics as no longer in need of treatment. Bernice and Angeline were both attractive; they dressed neatly and in good taste. They appeared to be friendly and sociable, but were slow in both mental and motor responses.



(a) Mental Growth Curve for the R. twins

(b) Change in sigma units in mental growth and neuroticism tendencies at each retest interval, for Jacqueline.

FIG. 15. Personal and intellectual behavior growth curves for J. R.

Bernice enjoyed drawing, and Angeline spent much of her leisure learning to sew. Because of the financial level of the home, it was necessary to make over clothes that were given them, and Angeline seemed to find much satisfaction in this occupation.

At their neighborhood school, the teacher reported that neither Bernice nor Angeline was able to "keep up" with the work of the 3rd grade in which they were enrolled, but that Bernice was the more seriously retarded in reading. She could read only at 1st grade level; the teacher reported she preferred to draw.

It was observed that Bernice had a slight tremor of the hand which was accented under stress. Angeline was attempting 3rd grade reading, but was in the slowest group in the class, and doing very poorly.

Because of her apparently greater need of attention, Bernice was referred for examination first, and was found to have an IQ of 47. She was then 13 years and 4 months. She was unable to score on the Gates Primary Tests, although she worked diligently at them. Angeline was found to have a mental age of 9 years and 2 months, an IQ of 69. On the Gates tests she was able to reach an achievement level of 1.4.

Although both girls had gone to school together for a little more than 6 years, they seemed happy at the prospect of attending different schools. Angeline enrolled in Center E; Bernice went to Center A.

In the experimental center Bernice was encouraged to do special work in art; she was given an opportunity to prepare exhibits and displays; and eventually to take charge of poster work in the special center and the elementary grades for P.T.A. projects and other community services. At the same time her art and other forms of handwork were integrated with other phases of learning activities in the carrying on of experimental units such as those described earlier (Chapter IV), and her skill subjects improved as well. She began to show more initiative and planning in the projects and services for which she assumed responsibility. She learned cooking and sewing, and seemed much interested in beginning to learn dress designing, and vocational dressmaking.

Bernice was awarded a special center certificate when she was 16. Her composite achievement level at that time was at advanced 6th grade. Although she was interested in continuing some special lessons in art, and in becoming more proficient in dressmaking, she did not continue in any further schooling at that time, since her mother was ill and seemed to prefer that Bernice stay home to take care of her.

Fourteen months later, at the age of 17½, she was married to a 24 year old salesman, who was then earning a salary of $27 per week. He was a high-school graduate, and had been employed by the one firm for 4 years. Both husband and wife appeared to be happy and well-adjusted to each other. There were no children. Bernice did not work outside the home, but was active in the neighborhood married women's club, and also in the church societies, of which both she and her husband were members.

Two years after her marriage, her husband was drafted into military service, and Bernice went to live with her mother, using her government allotment to maintain her own expenses and pay tuition at a business college where she enrolled in commercial courses. Within the year she was employed in the office of a defense plant, doing filing and general office work. At the close of the study, she was still employed by this firm, and was saving toward a home to be established when her husband returned to civilian life. She still derived satisfaction from making her own clothes, and was continuing with her art work, but only as a leisure time activity.

On successive retests of intelligence, Bernice was found to have the following IQ's 47, 67, 53, 71, 82, and 84. Her Bernreuter percentiles on the neuroticism schedules were 69, 57, 38, 27, 23, and 24. Her ratings on the introversion schedule were similar, while her self-sufficiency ratings progressed continuously from the

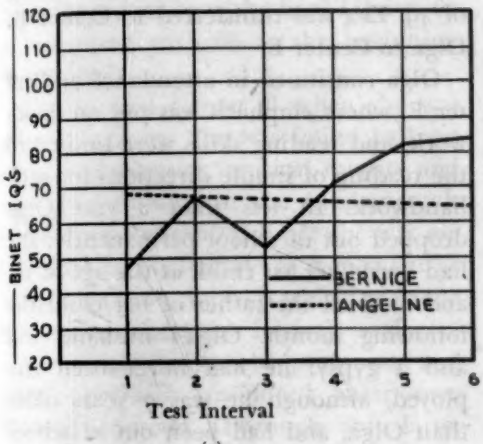
19th percentile at entrance to the 81st percentile at the end of the study.

Angeline left Center E when she was almost 16 years of age, having reached an achievement grade level of 4.6. Although she planned to enroll in a technical school the following fall, she did not do so.

She was employed intermittently at house work jobs until 6 months before the end of the study, when she became engaged and decided her full time was needed making plans for her marriage, and caring for her mother who kept in poor health. By the close of the study, her fiance had been drafted, and Angeline's plans for the wedding had been indefinitely delayed. She remained unemployed and out of school up to the close of the study.

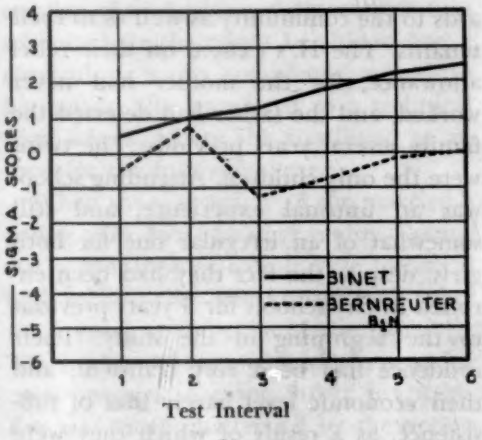
On the intelligence retest at the close of the 5 year evaluation period, Angeline had an IQ of 64, a drop of 5 points over her original test. In Figure 16, the mental growth curves for both Angeline and Bernice are presented, together with the growth curves of Bernice in the areas of personal behavior and mental development.

According to these curves, Bernice showed a rapid rise in intelligence in the first interval of the in-school period, followed by a sharp drop towards the close of the in-school period. From that point it continued to rise, apparently reaching a plateau toward the end of the post-school period. Analysis of curves in sigma scores shows greater absolute change in personal behavior, as measured by the Bernreuter schedule, than in intelligence, as measured by the Stanford Binet. In the first interval (marked by test 2) gain in intelligence was accompanied by a drop in neurotic or introverted behavior, according to the Bernreuter, and continued in the last post-school interval, although change over the preceding testing was slight. However, although Bernice's IQ remained almost constant at the last 2 intervals, when measured in sigma units the last testing showed greater inferior deviation from the mean of the total group than did the same IQ value at the preced-



(a)

Mental Growth Curve for the J. twins



(b)

Change in sigma scores in mental growth and neuroticism tendencies at each retest interval, for Bernice.

FIG. 16. Personal and Intellectual Growth Curves for B. J.

ing interval. Except for these two disparities, both the curves of neuroticism (and introversion) and of mental growth are similar.

Pair Number 3: Eva and Olga, the H. twins, were gypsies living with their mother in a little one-room frame shack near the river, a building which had once been a small store, but which had long since served its usefulness. It was on the "condemned" list of buildings to be torn down because they were hazards to the community as well as to their tenants. The H.'s existed on their relief allowance, for the mother had never worked, and the father had deserted the family several years previous. The twins were the only children. Attending school was an unusual experience, and still somewhat of an irregular one for both girls, despite the fact they had been enrolled in city schools for 6 years previous to the beginning of the study. Their residence had been very transient, and their economic level barely that of subsistence, as a result of which they were frequently absent from school because of insufficient clothing. All of these factors combined to make regular school attendance very difficult.

Despite their poor financial circumstances and irregular mode of life, both girls were in good general health with no physical handicaps. Olga was considerably overweight according to height and weight norms, but according to the examining physician, this was a condition to be remedied by proper diet, exercise, and the practice of other regularities of good living; it was not the result of an abnormal function.

The girls were 12 years and 11 months of age at the beginning of the study. The primary problems for which they were referred were "lack of educational achievement, irregular attendance, and inability to learn." Both girls were completely lacking in skill in the school subjects; they were unable to read even at the pre-primer level; they knew few additional facts, although they could count. They could write and spell their own names, but not their addresses.

Upon examination, Olga was found to have a mental age of 8 years and 6 months, or an IQ (S.B.) of 66. Eva showed herself to have a mental age of 6 years and 4 months, resulting in an IQ of 49. Eva was transferred to Center B; Olga to Center E.

Olga continued in attendance at Center E, where emphasis was put on handwork, and reading skills were limited to the reading of simple directions for such handwork. In less than a year Olga dropped out of school permanently; she had borne her 1st child, at the age of 14, and married the father of her child the following month. Olga's husband was also a gypsy; he had never been employed, although he was 7 years older than Olga, and had been out of school for 5 years prior to the marriage. Olga, Harry, and the baby shared the one-room shack after marriage, with Mrs. H. and Eva.

The family unit made up of this fourteen-year-old wife and mother was satisfactory to her mother and themselves. It was of necessity considered a poor social unit because of the physical and mental immaturity of Olga, and her lack of training for motherhood; it was a poor unit on economic criteria, because it continued to rely solely on public assistance for sustenance, with little expectation of improvement.

At the beginning of the marriage, Olga appeared to derive satisfactions from both her husband and the baby. But within a few months, Harry had disappeared; and slightly more than a

year later, Olga had borne another child, this time of unknown paternity. She was still living at home, with her mother. She appeared satisfied with her pattern of living; she fluctuated between periods of interest in her two children, and complete unconcern for them or their welfare. Her mother likewise apparently accepted the family situation as satisfactory.

The intelligence retest at the close of the 5 year period showed little change from the initial test; the final IQ was 67 as compared with 66 at the beginning of the study.

Eva entered Center B when she was almost 13 years. She was found to have a voice of pleasing musical quality and was given lessons in the fundamentals of voice in the center. Later she was encouraged to participate as a member of the Girls Choir, a group which provided musical numbers for festivals and concerts, as well as school programs, and which annually produced their own musical operetta. Through this latter phase of musical creative activity, Eva began to improve in her reading, since writing the simplest of lyrics required the simple tools of reading, writing, and spelling. Once the approach to these skills was made, Eva seemed to be interested in "getting myself educated", as she phrased it.

She drew books from the circulating library regularly, beginning with music appreciation stories and expanding to stories and books on related handwork, how to make puppets, how to make custumes of other countries, and other similar books. While she soon included various fiction in her reading, she still read primarily in the field of music, progressing finally to biographies of composers and stories of operas.

When she was 16 years old, Eva graduated, with a composite achievement level of 8.9 for all tool subjects. At graduation she sang the vocal solo, "The Indian Love Call", and gave evidence of a poise and social maturity in group situations which exceeded similar behavior which had been displayed at entrance.

Following graduation, Eva desired to continue in attendance at the special center rather than at a graded high school, but as her attendance became irregular, she was advised to transfer to a school where she might be able to find a curriculum more completely suited to her needs. She transfered to a technical high school, where she continued to attend for the following year.

When she was nearly 18 she married a young man, two years her senior. George was a graduate of a four year technical high school; they had known each other for 3 years at the time of the marriage. The husband was employed as a machine press operator, earning $16.35 per week. Eva was much challenged by the opportunity to set up a financially independent household, "without us being on relief". They rented a 4 room flat in a community which was still very poor, but, nevertheless, was superior to the maternal home.

Eva's first child was a girl, normal physically and apparently mentally. The young mother made good use of child welfare services and public clinics and seemed to make an earnest effort to follow their suggestions and directions intelligently. Agency workers spoke of her as taking good care of the child and cooperating well with them.

Eva and her husband did not participate in any organized group work in the neighborhood. However they appeared to enjoy attending an occasional concert together, as well as on the dance floor.

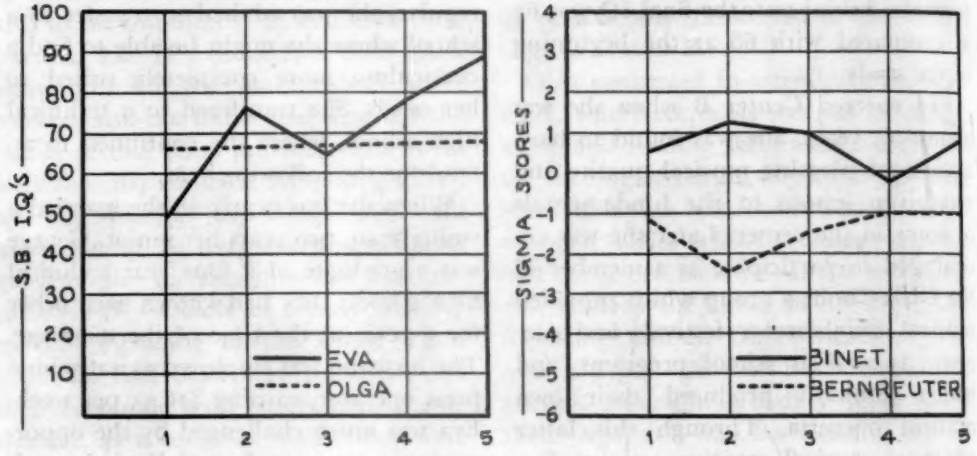
They seemed to have a normal social life as a young married couple.

At the close of the study, Eva was 6 months pregnant, and was looking forward to the new baby as a companion for Madeleine.

On successive retests, Eva's IQ ratings rose from 49 at entrance; to 76, at the 1st retest; then dropped to 65 at the close of the 1st 3 years; rose again to 78, at the close of 4½ years; and rose again to a high of 89 by the close of the evaluation study. In Figure 17, the comparative mental growth curves are given for Eva and Olga, and also the curves of personal and intellectual behavior in sigma scores.

Eva's mental test performance rose rapidly in the 1st interval of the in-school period, then dropped slightly, after which it continued to rise until the close of the study. The sigma curve of her changes on the Bernreuter neuroticism curve show a sharp correlative change: at the 1st interval, mental test performance was slightly above the mean, and personality aberration was slightly below; at the 2nd interval, IQ rose and personality deviation dropped; at interval 3, IQ dropped (in relation to deviation from the mean of the group at that interval), and personality deviation rose; at interval 4, the IQ sigma score dropped again, and the Bernreuter sigma rose.

Eva's statistical curve appeared to be corroborated by her experiential activities. She gave evidence of good adjustment to her family and immediate community.



(a) Mental Growth Curve for H. Twins

(b) Sigma Curve of Personal and Intelligence scores at each Interval, for Eva.

FIG. 17. Personal and Intellectual Growth Curves for E. H.

Pair Number 4: The H. girls were Mexican twins, living with their mother and father in a 2nd floor, rear, flat in a community area classified as "very low" on the basis of its economic level. Both mother and father were in good health, as were the twins. Helen was in need of visual correction but had no other defects; Ortensia had none.

The father earned on an average of $15 a week, when employed at odd jobs, all of them unskilled and temporary, but

the family had never applied for public assistance. Neither of the parents had had any formal education. Mexican, Italian, and some English were spoken in the home; the girls spoke a mixture of all 3, which contributed to their retarded language development in school.

Both girls were considered to be problems at school because of their extreme retardation in learning to read; at 12 years and 10 months of age they had been placed in advanced 5th grade, but could not attempt any of the reading required at that grade level, and were also retarded in related language areas.

On the Stanford Binet test, Helen was found to have a mental age of 6 years and 3 months, resulting in an IQ of 49; Ortensia responded at a mental age level of 5 years and 10 months, with an IQ of 46. At first, the parents were perturbed at the transfer of the girls to special schools, particularly because they had always lived close to their district school, and this transfer required each of the girls to use public transportation. They were particularly anxious that the girls not feel lonesome because of the separation, but it was explained to them the desirability that they be given an opportunity to make friends with other children their same age, rather than continuing their dependence on each other.

Helen enrolled in Center C a little less than 2 months before her 13th birthday. Special attention was given to her language problem, and interest in reading was motivated through such experiential units as the vocational approach to restaurant work, the management of school lunch service, and other activities, which provided opportunity for her to supplement her inadequate diet with foods from the home economic kitchens, and those which taught her how to make simple clothing and to alter and refashion used garments. These activities helped her to improve upon her standard of living, even though slightly. To the extent that these material improvements increased her confidence by improvement in nutrition and personal appearance, to this extent these skills also improved Helen's personal behavior.

She grew more active in her leisure time activities, becoming a regular member of a neighborhood recreational center, and participating in many of its divisions. As her reading improved, she began to borrow books from the library regularly, at first reading nature stories almost exclusively, but gradually broadening her interests to include a variety of fiction and non-fiction.

Helen showed a composite achievement level of 7.3 when she graduated from the special Center C. She did not continue further education at that time, but secured a position as a packer in a candy factory, at $16 per week. It was a source of pride to her parents that she was earning as much as her father, and "had graduated."

A year later she began attending a technical high school in evening sessions, learning dress designing and millinery. She secured another position, this time as assistant stylist with a millinery firm at a salary of $21 per week, and was still so employed at the close of the study. She was also still attending evening high school, where she was then a senior.

On her successive intelligence retests, Helen showed a gradual rise in mental ability, from an IQ of 49 at entrance, to 78 at the close of the first interval; then down to 71 at the 2nd interval; and up to 80 at the close of the study. On her Bernreuter schedule, she ranked at the 87th percentile at entrance, then dropped to th 67th, 57th, and finally to the 48th percentile at respective inter-

vals. Her test performance indicated statistically the improvement in personal behavior which her experiential activities evidenced.

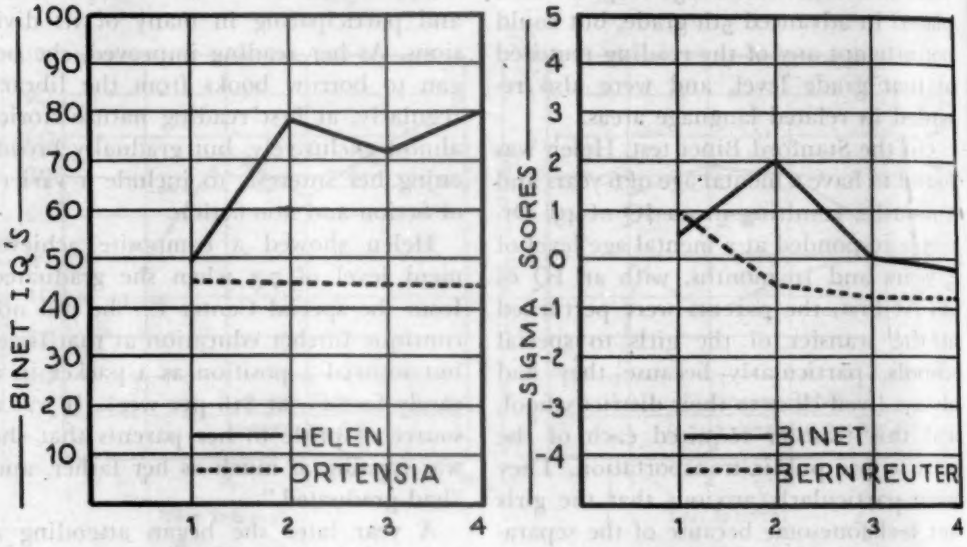
Ortensia entered Center E until she was 16 years of age when she left school to take a job doing housework at $8 per week with room and board. Her employer rated her as being co-operative, cheerful, and industrious, but dismissed her after 8 months work because she was slow and inefficient. While the employer praised the girl's willingness and her attempts to learn, she felt that she could not spend the time necessary for her to acquire the housework skills required on the job. After losing that job, Ortensia entered a technical school (of post-elementary level), but dropped out of school after the first 3 weeks, because she "couldn't decide if I wanted to go; what good would it do me?"

Ortensia's problem in language development remained unremedied when she left school. Her reading and spelling achievement never exceeded that of beginning 2nd grade level, although her composite achievement was that of beginning 3rd grade.

After leaving technical school, Ortensia remained home and helped her mother with general duties. Both girls seemed to be well adjusted to each other and to their situations; Ortensia and mother kept house, and Helen and father were wage-earners. With their combined wages, the H. family were able to live a little more adequately than they had when the girls were in school.

Both girls were engaged at the end of the study, but were planning post-war marriages. Helen's fiance was overseas, Ortensia's was in defense work, but Ortensia could not "make up her mind to get married yet."

At the close of the 5 year period, Or-



(a) Mental Growth Curve for H. Twins.

(b) Sigma Curve of Mental and Personal Scores, for Helen.

FIG. 18. Personal and Intellectual Growth Curves for H. H.

tensia showed an IQ of 44—little change over her original 46.

The mental growth curve for each of the girls is shown in Figure 18.

From Helen's mental growth it can be seen that her IQ rose sharply during the first interval of the in-school period, then dropped slightly, to rise again in the last interval. Her sigma curves show a mental test performance slightly above the mean of her group, at entrance, with an index of introverted behavior, almost at the average of her group; by the 2nd interval, the upward swing of intelligence was accompanied by a decline in personal behavior deviation; by the 3rd interval, her IQ had dropped slightly below the mean of her group at that interval, and it remained in this same level (in relation to her group) at the end of the investigation. On the other hand, at interval 3, the personal behavior index, as given by the Bernreuter schedule, also dropped, but not to as great a degree as did the Binet. By the 4th interval, the Bernreuter index had again risen slightly, as the Binet IQ dropped toward the group mean.

In general, in these individual cases of girls from the experimental centers, the index of aberration in personal behavior appeared to decrease with a rise in the IQ and to increase with a drop in mental test performance. To the extent of the cases cited, they gave additional evidence of the difference in mental growth between individuals of the same heredity, and of fluctuations of IQ in the same individual.

Twins Paired Between Experimental Centers and Regular Elementary Grades

Because of the nature of the referral procedure by which pupils were recommended for special placement, there were 5 cases of twins paired between the experimental center and regular graded classes. Of these, 3 were boys, and 2, girls. Brief reports of the activities of each of these pairs will help to give additional comparison between individuals of the same heredity and differing school environments.

Pair Number 1: Edward and Louis G. were 14 years and 9 months at the time Louis was examined by the placement bureau. They were the only boys of 4 children. The family lived in a community area classified as "low" according to its economic level, and as "high" according to its rate of delinquency. Both parents had had an 8th grade education, but spoke Italian in the home. The children spoke the 2nd language better than English, which they used only in school. At the time of the beginning of the study, the family was receiving public assistance, and had been for the previous 2 years. Both parents were in good health, as were Louis and Edward. Louis was in need of glasses but had never been fitted.

Louis was said to have a passionate temper, to pull knives on the boys on the playground, to be always "ready for a fight." He was reported to be extremely defiant in the classroom, self-willed, and lazy. These were part of the problem for which he was referred for examination. He was found to have an intelligence quotient of 40, a mental age of 6 years and 3 months. He was recommended for exclusion, even from the special center, because of low mentality. However, Center A used its prerogative of accepting him.

He was very sociable in his new placement but somewhat unable to see why his previous behavior patterns were viewed with disapproval by his new companions. He frequently seemed unaware of irrelevancies in discussion, and only

after careful and kindly explanation of simple forms of courtesy and accepted custom did he seem to realize he had previously violated them. This was evidenced one day when he asked when the new ink-wells were coming to adorn the desks which were as yet unfitted with wells. He was told when they were expected, whereupon he evidenced his joy at learning how to write.

"And to think, now, I'm going to write with ink! You know, Miss—— got us ink once; it was fun. We used to see how close we could throw the bottles at the blackboard, and not hit the teacher."

When the teacher suggested perhaps ink ought not to be used, Louis could not relate her suggestion to his remark, and tried in vain to understand why she considered a change in writing plans. When it was made clear to him he remonstrated, "But I wasn't talking about doing that now. Who would want to do silly things like that when they know better? I was just telling what we used to do."

Louis worked hard, showed a high degree of initiative in self-planned work projects, and graduated 3 years after special center placement. At that time his composite achievement level was 8.6. He was still brusque and quick in manner, but sociable with all those with whom he worked, and well-liked by them. His leadership within the boys' activities was recognized by both teachers and pupils.

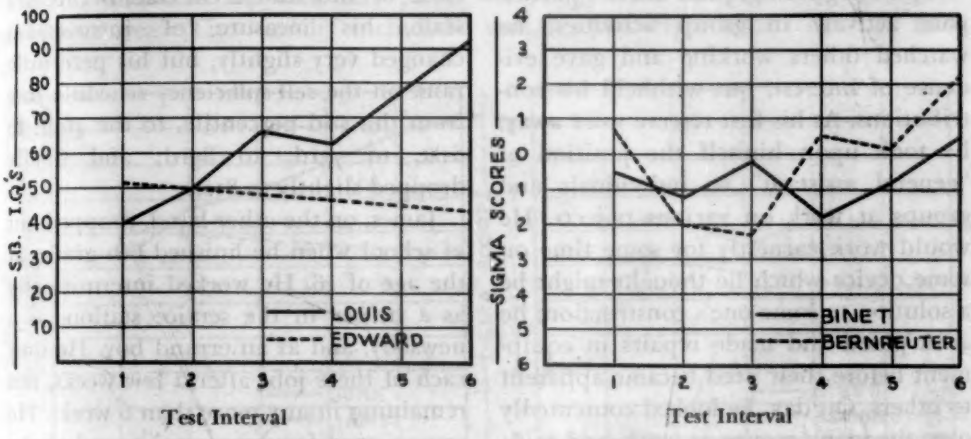
Louis did not continue in school after elementary graduation. He secured a job as a truck driver with a wholesale food market, at $22 per week, and remained in this job for 4 years and 3 months. He quit "to try for a better job," and secured one as a stock clerk with an industrial firm, at a salary of $25 per week, from which he was laid off temporarily after 4 months, because he was not needed. Three months later he went to work as a car checker with a railroad, earning $32 per week. A year and 5 months later, while he was still employed with this firm, he was inducted into the United States Army. At the close of the study he was still in service.

On successive intelligence tests through the evaluation period, Louis showed gradual rise from an initial IQ of 40; to 50, after a period of 18 months; to 66, 3 years after entrance; a drop to 63, 4½ years after entance; a rise again to 78, 6 years after enrollment; and to 93 at the end of the study.

His twin, Edward, remained in the regular grades. He was reported to be retarded in his work, but was not referred for examination because the classroom teacher believed he would progress well enough to be promoted to the next grade at the end of the year. He was in 5th grade at the time of Louis's transfer. On a Binet test taken at that time he showed an IQ of 51. Edward was not promoted, but remained in the same grade for a little more than another year, when he ran away from home and school. He was found after he had hitch-hiked across several states, and had been arrested for automobile theft. He was later paroled; but broke parole, and was found guilty of burglary. At the close of the study he was again free, but was not employed; he had been rejected for army sevice; and was without future plans. On an intelligence retest made at the close of the study he was found to have dropped from his original IQ of 51 to 43.

In Figure 19 are presented the comparative mental growth curves for Edward and Louis, and the sigma scores for Louis, and the sigma scores for Louis on his behavior rating in comparison with his intelligence test performance.

From the above figure it can be seen that Louis's rise from his original IQ to that at the end of the study was continuous until interval 4, when his IQ dropped slightly over that of the preceding test, although maintained the greater part of its gain over the original measure. From interval 4, a steady rise was found until the close of the study. An inspection of sigma curves in the area of



(a) Mental Growth Curve for Louis and Edward G.

(b) Sigma Curve of Binet and Bernreuter Sigma Scores at each Retest Interval for Louis.

FIG. 19. Growth Curves for L. G.

personal behavior, as contrasted with that of change in intelligence, shows a sharp drop in behavior aberration in the first interval, with also a slight drop in the sigma score equivalent of the IQ at that interval, although there was an absolute gain in IQ. From the 3rd interval, gain in IQ was marked by a drop in behavior deviation until the end of the study, when both mental growth and behavior deviation were on the increase, in terms of their deviation from the mean of the group of which Louis was a part.

Pair Number 2: John and James L. were the twin brothers of Irene, who was 5 years younger than they. The family had been on relief, but at the beginning of the study the father was employed by WPA, making $21 per week. The mother was in good general health, the father only fair, and frequently had to be away from work because of ill health. The children were in good health, but nutrition was poor. John was very much overweight, and was given an endocrinological examination, but no glandular malfunction was discerned.

All three children were academically retarded. At the beginning of the study John could read at a pre-primer level, and James could do fairly well with a 1st reader. Their sister, Irene, was in 3rd grade, and could read much more comprehendingly and with greater speed.

John was in 4th grade; James in 5th at the beginning of the study. It was believed that James could learn faster if he would put forth more effort; he was not considered mentally deficient. John was referred for special examination because his progress was below even that of James, and because his size and age made it difficult to continue him in his grade placement, although his lack of achievement in the skill subjects made it equally difficult to promote him.

John was found to have a Stanford-Binet IQ of 51, upon examination, and transferred to Center A. Here he was given an opportunity to enter into his learning activities from a non-reading approach, and use excursions, construction activities, and group discussion to develop more meaningful experiences, which in turn enriched his learning in reading and the other language arts.

At the beginning, John did not participate actively in group activities; he watched others working and gave evidence of interest, but withheld his contributions. As his first reserve wore away, he took upon himself the position of "general assistant" to individuals and groups at work on various pojects. He would work earnestly for some time on some device which he thought might be a solution to some one's construction; he anticipated and made repairs in equipment before their need became apparent to others. On day, he looked contentedly over the many groups at work, and said:

"You know, I like always to be helping some other group. I don't like so much to do things myself."

Although in time he did take on occasional independent work, most of the time he was in his element helping other groups work out their plans.

John's reading and general language development improved, slowly at first, and then more rapidly. Upon graduation from the special center, he attended a vocational school, where he took courses in electrical shop and metal work. He was considered a slow worker, but a careful one, by the shop teachers. Upon the completion of 2 years of this work, he left school and secured a job as a department store salesman, at a salary of $28 per week. He was well-liked by his fellow-workers, and considered a good salesman by the head of the department. He remained in this job for 3 years, until he was inducted into the armed services.

At the close of the study, he was still in service, holding the rank of sergeant.

On successive intelligence retests in the study, he showed a rise to 68, at interval 2, in comparison with his IQ of 51 at special center enrollment. By the 3rd test it had risen to 72; then to 80, at the 4th; to 88, at the 5th, and finally to 92 at the close of the study. On the Bernreuter scale, his measure of introversion changed very slightly, but his percentile rank on the self-sufficiency schedule rose from the 2nd percentile, to the 46th, to 61st, to 73rd; to 83rd; and finally dropped slightly to 81st.

James, on the other hand, dropped out of school when he finished 6th grade, at the age of 16. He worked intermittently as a helper in the service station, as a newsboy, and as an errand boy. He quit each of these jobs after a few weeks, not remaining in any more than 6 weeks. He was rejected for army service, and at the close of the study was just beginning a job as truck driver for a retail merchant, at a salary of $15 per week. He had been employed there 3 weeks. On the intelligence retest at the end of the study, James was found to have an IQ of 53, in comparison with his initial IQ of 61.

In Figure 20, the mental growth curves for John and James are shown, and also their successive sigma scores on the Bernreuter and Binet scales.

According to those figures, it can be seen that John's IQ shows a steady rise from the beginning to the end of the study, with a slightly more rapid rise at the beginning than at any other period. The sigma curves indicate a lessening of the deviation from the mean of the Bernreuter measure at the 2nd interval, while the IQ showed a slightly greater deviation away from the mean of the group,

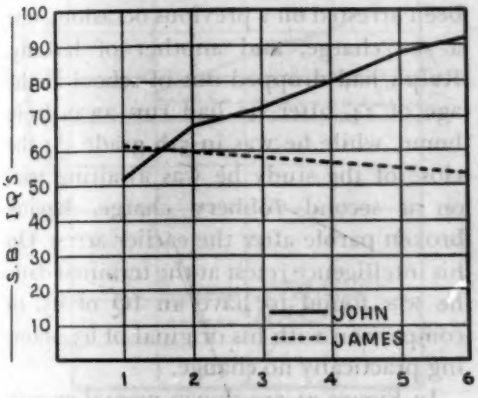
than at entrance. By the 3rd interval, a drop in IQ (sigma score) was accompanied by a slight drop in behavior aberration; from the 4th interval until the end of the study, gains in mental test sigma scores were accompanied by corresponding decreases in introversion tendencies.

Pair Number 3: Stanley and his brother, Ralph, were the P. twins, living in a rear one-room flat in a very poor economic area. The family included Mary, 12 years older than the twins, and a child by Mr. P.'s 1st wife; Frank, 1 year older than the twins, a child by Mr. P.'s 2nd wife; and Stanley and Ralph, children of the 3rd wife; the 4th wife was taking care of the family.

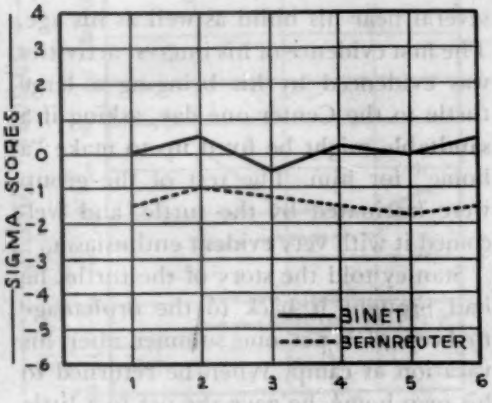
The social conflict history of the family dated back to 15 years before the beginning of the study. Both the older sister and the 1st and 3rd Mrs. P.'s had court records of sex delinquencies; during the time of the 2nd marriage, both husband and wife were sentenced to a penal institution on robbery charges. At various points in the previous history, Mr. P. and the mother of the twins and Mary, had been diagnosed as mental defectives by the psychiatric services of the courts in which their cases were heard; Mr. P. was reported as a paranoid, and Mrs. P. as a neurasthenic.

When the twins were a little more than 5 years old, they were placed in an orphanage, after having been found alone in the care of 6½ year old Frank, following their desertion by both parents, separately, after Mr. P had attempted to take the life of his wife after his release from another jail sentence.

At the time that Stanley became a problem in the regular classes he had been with his father and step-mother not quite 3 years. His teacher reported that he was a quiet boy, timid, sensitive, and easily hurt, both physically and emotionally. He was then of slight build, although he was not often ill. He exhibited very withdrawn behavior; he confided in no-one. He was poorly adjusted to his school companions, cried easily and frequently, and resented the pity



(a)
Mental Growth Curve for James and John L.



(b)
Sigma Curves for Bernreuter B,N Scale and Binet Scale at each Retest Interval for John L.

FIG. 20. Growth Curves for J. L.

which thus occasionally fell to him. He was in 3rd grade; but his academic achievement was slightly more than 1st grade, except in handwriting, in the excelling of which he derived much satisfaction.

Upon examination he was found to have an IQ of 68, at the chronological age of 12. He was transferred to Center C, where he seemed to be perpetually bewildered during his first few days. However, he was helped to get acquainted with other boys, among which were several near his build as well as his age. The first evidence of his interest activities was evidenced by his bringing a large turtle to the Center one day, asking if a sandtable might be fixed up to make "a home" for him. The rest of the group were fascinated by the turtle, and welcomed it with very evident enthusiasm.

Stanley told the story of the turtle; he had brought it back to the orphanage to keep as a pet one summer after his vacation at camp. When he returned to his own home, he gave the pet to a little friend at the orphanage; that boy had now been placed in a foster home, and had returned the turtle to Stanley because he could not keep him in his new home. Neither could Stanley, but he had brought it to school with some hope that his pet could be cared for.

The turtle became the Center's own special pet. While Stanley remained he took care of it, and taught others what to do and how to do it. When he graduated, his last gesture of magnanimity was his permanent gift of the turtle to the Center.

Following graduation, Stanley attended an academic high school, working in the evenings and Saturdays at a nursery. He seemed to find pleasure in growing things, whether plants or animals. At the close of the study, he was a senior at high school, at the age of 17. Apparently, he was well-adjusted to his school and community, according to the opinions of leaders in each of these activities. There were no court records against him, although 6 months before the close of the study, he was accused as an accessory in an automobile theft, but was acquitted when it was proved that he had been in his place of employment at the time of the theft.

The boy who was convicted of the theft was Ralph, Stanley's twin, who had been arrested on 2 previous occasions, one a sex charge, and another of larceny. Ralph had dropped out of school at the age of 14, after he had run away from home, while he was in 5th grade. At the close of the study he was awaiting trial on a second robbery charge, having broken parole after the earlier arrest. On his intelligence retest at the terminal date, he was found to have an IQ of 65, in comparison with his original of 63, showing practically no change.

In Figure 21 are shown mental growth curves for Stanley and Ralph, and also sigma curves for Binet and Bernreuter measures for Stanley at each retest interval.

Pair Number 4: Lavern and her sister, Gloria, were the twin daughters of Mr. and Mrs. H. They lived in a poor section of the city in a home they had once owned, but had lost in the beginning depression years just prior to the opening of the study. The only social agency with which the family had been in contact was the public welfare, which had assisted them for a short period prior to the beginning of the study. They were not on relief at the time the experiment began, but the father was employed on WPA at a salary of $18 per week.

The twins were the only children in the family. The girls were in good

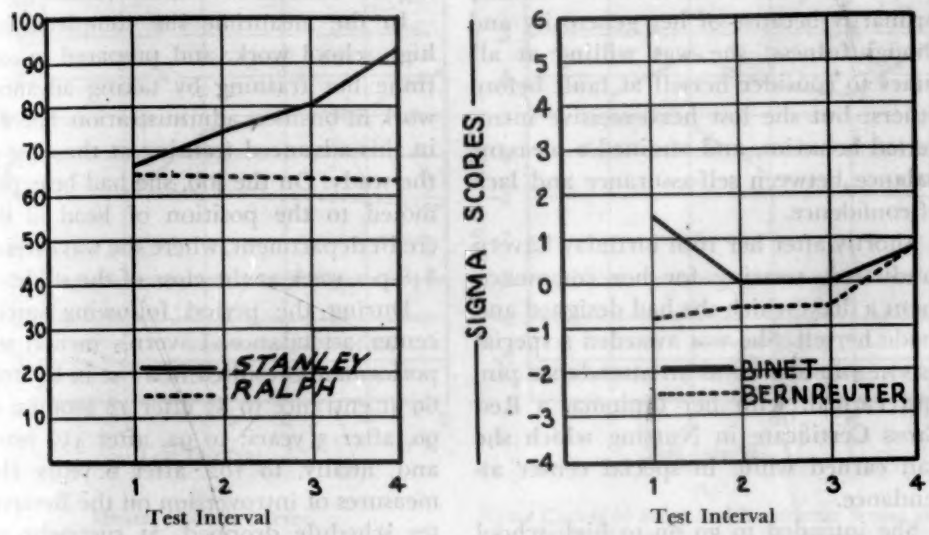
health; Lavern was fitted with glasses, Gloria was in need of none. They were taken for regular check examinations of vision, hearing, and physical condition. Parents and children attended religious services regularly, and the girls both helped with the household chores at home.

Lavern was referred for examination because of general school retardation. Her oral vocabulary was very limited; she was unable to read; she was unable to reason simple arithmetic problems, her spelling was limited to her name, and "cat." She was in 2nd grade, but was unable to do the work even of this grade, despite the fact that she was almost 13 years of age.

Gloria was in 5th grade, although she was unable to do the work of the class. She had been put in this grade placement primarily so that she and Lavern might be separated, since they were growing very dependent on each other.

Lavern was found to have an IQ of 69, upon examination. She was referred to Center A, where she found difficulty accustoming herself to being without Gloria. While she was very courteous and considerate of others at all times, she remained very much to herself, and appeared to be moody and uncertain of herself. Prior to her transfer to the special center, this lack of confidence and uncertainty had been apparent to those with whom she worked. When she met the examiner for her Binet test, she immediately informed her; "I know I'm very dumb in school, but I can't help it." In her previous school situation, she and Gloria had served each other as scapegoats. Now, that escape had been taken from her.

Attention centered on drawing Lavern's attention and interest to creative expression in the arts, in which she was particularly able. She became intrigued in pictorial presentation, particularly by



(a) Mental Growth Curve for Stanley and Ralph P.

(b) Sigma Curves of Personal and Intellectual Growth for Stanley.

FIG. 21. Growth Curves of Personal Behavior and Mental Growth of Stanley P.

the use of steroptican slides, in the making of which she grew very skillful. In order to present the completed slides effectively, oral and written language was required, a motivation for the improvement of learning in all skill subjects. Once her interest in learning activities found root, Lavern began to realize her abilities and potential skills, and became eager for their development. She was well-liked by those who worked with her, primarily because of her generosity and thoughtfulness; she was willing at all times to consider herself at fault before others; but she lost her excessive introverted behavior, and attained a pleasant balance between self-assurance and lack of confidence.

Shortly after her 16th birthday Lavern graduated, wearing for her commencement a dress which she had designed and made herself. She was awarded a special service pin as well as an attendance pin, and earned, with her diploma, a Red Cross Certificate in Nursing which she had earned while in special center attendance.

She intended to go on to high school after graduation, but her mother had been seriously ill, and it seemed desirable that Lavern go to work, if possible. The mother commented that it seemed strange: Lavern had seemed so "dumb" a few years before, so unable to do anything for herself, much less others; "Now," she said, "I find I actually rely on her to take care of things for us."

Her 1st job was in charge of a concession at an amusement park for the summer months, at which she earned $25 per week. After 3 months, she quit that job because, "I'd never be able to do any better there," and started as a clerk in a large retail department store. That fall she began a commercial high school course, attending in evening and summer sessions. The firm with which she was employed was interested in her further training, and worked out a dual schedule for her, by which she spent part time in the offices, becoming acquainted with office machines and systems peculiar to the firm, and the rest of her time clerking. She was then earning $22 per week. She was given progressively more responsibility on this part-time job, until she was working full time in secretarial work.

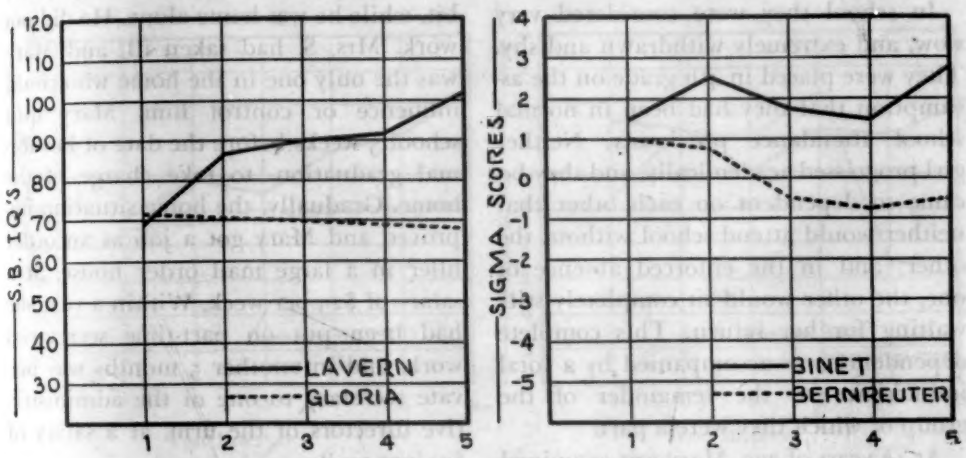
In the meantime she completed her high school work, and prepared to continue her training by taking advanced work in business administration. She was in this advanced training at the close of the study. On the job, she had been promoted to the position of head of the credit department, where she was earning $48 per week at the close of the study.

During the period following special center attendance, Lavern's mental test performance resulted in a rise in IQ from 69 at entrance to 87 after 18 months; to 90, after 3 years; to 92, after 4½ years; and, finally, to 102, after 6 years. Her measures of introversion on the Bernreuter schedule dropped, at successive retests, from a percentile rank of 99, to 96, to 76, to 48, and finally to 39. She had dropped from a position of seriously extreme introverted behavior to a position of behavior comparable to that of the upper-third of better adjusted adults.

Gloria graduated from 8th grade a year and a half after Lavern. She stayed out of school for 6 months, supposedly to look for work, which she did not do. She was prevailed upon by Lavern to return to full-time school attendance at high school, "because," Lavern said, "if Gloria doesn't go to high school now, I don't think she's likely to start later. She doesn't like it that much."

At the close of the study, Gloria was in her first year of high school. She was

receiving only fair grades, with occasional failures. She was not employed in any part-time work. Part of this program of activities was the direct result of Lavern's urging and her mother's agreement; although Gloria herself had no alternates to suggest. At the time Lavern was transferred to the special center, Gloria's IQ was found to be 71; at the close of the study it was 68, showing no appreciable change.



(a) Mental Growth Curves

(b) Sigma Curves of Binet and Bernreuter Scores at Each Retest Interval for Lavern.

FIG. 22. Mental and Personal Behavior Growth Curves for Gloria and Lavern H.

In Figure 22 the curves of mental growth are shown for Lavern and Gloria, as well as the sigma curves for Gloria in the areas of personal behavior and mental development.

According to these curves, it can be seen that Gloria's intelligence test performance rose continuously from enrollment until the end of the study. Most rapid rise occurred in the first interval, but gradual change appeared in each interval throughout the study. Inspection of the sigma curves show that gain in sigma scores of intelligence test results was accomplished by loss in the magnitude of sigma scores of mental aberration. Particularly was this correspondence evident in the first four intervals. At the close of the study, Lavern's IQ was markedly above the mean of the group of which she was a part; and conversely, her measures of deviation in personal behavior were far below the mean.

Pair Number 5: Mary and Elsie M. were only children, living with their mother and step-father at the time of the study. The complications of their social history had been responsible for many misinterpretations and misunderstandings in their school records, which resulted in their assumptions of feelings of guilt which interfered with normal emotional development.

The twins were born out of wedlock in a neighboring English-speaking country. For several years they lived with the mother and her brother's family, assuming the mother's maiden name of M. In their early childhood, the mother came

to this country, where she married Mr. Z., who was not the father of these children. Following this marriage, the children were brought to join the mother and step-father, taking the name of Z. after they arrived for all records, although they were not legally adopted. They were 9 years old at that time; after coming to this country they started to school for the first time.

In school they were considered very slow, and extremely withdrawn and shy. They were placed in 4th grade on the assumption that they had been in normal school attendance previously. Neither girl progressed academically, and they became so dependent on each other that neither would attend school without the other; and in the enforced absence of one, the other would sit completely still, waiting for her return. This complete dependence was accompanied by a total indifference to the remainder of the group of which they were a part.

At 12 years of age, Mary was examined by the placement bureau and found to have an IQ of 68; she was transferred to Center A, while Elsie remained in her regular grade placement. At the beginning, Mary appeared very fearful and suspicious of everyone on the new center, behavior which she evidenced by stubborn resistance to their suggestions or offers to help her, and to their attempts to include her in their planning. As she became more familiar with the free activity organization of work in the center, and gained some security from the knowledge that she would not be expected to fit a rigid behavior pattern, she relaxed, and gradually assumed a cooperative place in the group.

Her progress towards leadership was gradual. She proceeded from individual work, to participation in small groups, to small group leadership, and finally to the presidency of the Civics Club, which was the all-student governing association of the Center. Upon the formal organization of the association of alumni from all centers, she was unanimously elected its first president.

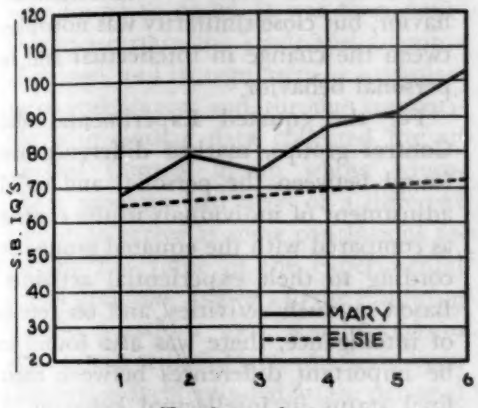
While Mary was still in school, Mr. Z. died and Mary's mother remarried. The new husband, Mr. S., drank to excess, and sold the household furnishings, bit by bit, while he was home alone. He did not work. Mrs. S. had taken ill, and Mary was the only one in the home who could influence or control him. Mary quit school 3 weeks before the date of her formal graduation, to take charge of the home. Gradually, the home situation improved and Mary got a job as an order filler in a large mail order house, at a salary of $25 per week. Within a year she had been put on part-time secretarial work, and in another 5 months was private secretary to one of the administrative directors of the firm, at a salary of $41 per week.

One year before the close of the study, Mary took on an additional part-time secretarial position with another retail firm near her first place of employment. She worked at this 2nd job during the early evening hours, from 5:30 to 9 o'clock at night; but 4 months after attempting this double load, she decided that the work schedule was too heavy to permit her to continue efficient work in either position, and she quit the second part-time job. She was still employed in her full-time secretarial position at the end of the study. She was reported to be efficient in her work and co-operative in her attitude. Mary herself, enjoyed her work, and took advantage of many employee's benefits such as group and hospital insurance; picnics and outings, and free vacations, and the company library. Around the office she was constantly

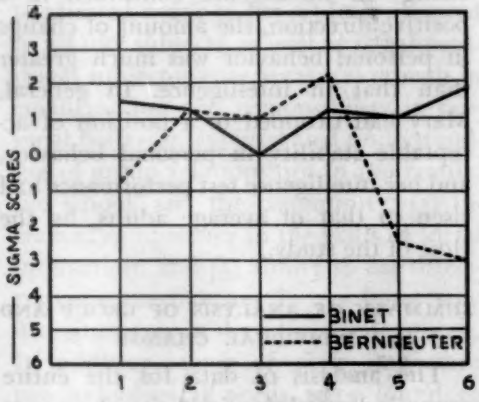
teased that she was "wearing out the company library."

In the meantime, Mary had re-assumed her mother's maiden name, M., upon the advice of the Social Security Agency which found the various family names conflicting and confusing in its system of security records. She had secured a position for Elsie, 8 months before the close of the study, but had arranged to do so in working, thinking she would get along all right if she could get a start.

Elsie's original IQ was 65; at the close of the study it was found to be 72. Mary's mental tests showed a steady rise from 68 at entrance, to 79 at the close of 1½ years. By the end of 3 years, it had dropped slightly to 75; but after 4½ years it rose again to 88, then to 91, and, by the close of the study, to 103. The Bernreuter



(a) Mental Growth Curves for Mary and Elsie M.



(b) Binet and Bernreuter Sigma Curves for Mary M.

FIG. 23. Growth Curves in Mental and Personal Behavior for Mary and Elsie M.

in a department operating on a different time shift than her own, in an effort to force Elsie out of her lack of confidence and "put her on her own."

Elsie had exhibited much the same behavior when left in her regular class, that Mary first displayed upon transfer to the special center. However, Elsie withdrew completely into herself, finally refusing to continue to go to school alone; she remained at home, where she did little else but wait for Mary's return from school. She would run errands or help with the housework, but only when Mary worked with her. It was because of this continued dependency that Mary had sought to separate her twin from her "on the job", although she was anxious to establish her

scale of introversion measures dropped from the 94th percentile, to the 74th at the 2nd interval to the 72nd percentile, to the 46th, and finally, to the 36th at the close of the investigation. Thus, from a seriously extreme tendency toward introversion, Mary had dropped to a rating comparable to that of the lowest one-third of average adults.

Figure 23 shows mental growth curves, and sigma curves for Binet and Bernreuter measures, for Mary and Elsie at each retest interval in the study.

According to these figures, it can be seen that Mary's mental growth curve fluctuated between rise and decline within the first two intervals, and then continued in a steady rise to the end of the

study. From the sigma curves, a marked relationship is evidenced between change on the Bernreuter and Binet scales. Gain in Binet sigma score was accompanied by a decrease in sigma score for the Bernreuter, during the first four intervals, the size of change (as indicated by sigma scores) remained comparable for these two measures, while the direction changed. During the last two intervals, however, while change in intelligence continued in a positive direction, the amount of change in personal behavior was much greater than that in intelligence. In general, Mary had dropped to a position of acceptable stability in personal behavior, and her intelligence test performance had risen to that of average adults, by the close of the study.

SUMMARY OF ANALYSIS OF GROUP AND INDIVIDUAL CHANGE

The analysis of data for the entire group indicated the similarity of amount and direction of change in each of the areas of behavior studied: personal, social, and intellectual. This close relationship was evidenced statistically both by the curves of change in each of these areas, as measured by change in objective test performance at periodic retest intervals; and also by the coefficients of correlations between change in these areas over the period of the study.

Comparison of change at the end of the post-school period with change at the close of the in-school period showed continuous change over the entire period, but a greater amount in the in-school intervals. Greatest overall change was found in the areas of intellectual behavior, but close similarity was noted between the change in intellectual and in personal behavior.

For the equated Experimental and Control groups, marked difference was found between the personal and social adjustment of individuals in the control as compared with the equated group, according to their experiential activities. Based on such activities, and on retests of intelligence, there was also found to be important differences between their final status in intellectual behavior. A comparison of data for twins separated between experimental and control centers, and between experimental centers and regular classes, contributed evidence toward these same conclusions.

Chapter VIII

Interpretative Summary and Educational Conclusions

Through this extended study it was desired to determine the possibility of change in the personal, social, and intellectual behavior of children who had been classified as feebleminded, during and after participation in an especially-planned educational program. If change were found to occur, it was then desirable to ascertain the kinds and amounts of change, and its regularity or irregularity of appearance; and, through comparison with similar data collected for an equated Control group whose educational program had been of a different nature, to arrive at some conclusions regarding the value of the experimental school program. Answers to the following specific questions were sought: (1) to what extent will children who have been classified as feebleminded attain personal and social adjustment after participation in a school environment planned to develop emotional stability, to further social interaction, and to develop self-confidence, and a sense of personal worth? (2) what degree of academic success will be achieved by these children? (3) how will the behavior of these children while in school attendance compare with their behavior after leaving school?

The 322 children who were the subjects of the study came from 5 special centers in a midwestern city. These centers provided day-school instruction for feebleminded children, and were maintained by the public school system of the city. The writer served each of the Experimental Centers as head teacher, with administrative and supervisory responsibilities in addition to duties of classroom teaching.

The experimental educational program was planned upon the basis of a study of the physical health, mental abilities, academic achievement, and behavior patterns of the participating boys and girls; and upon a study of their family, community, and educational backgrounds. This study showed their predicated needs to be: (1) improvement in all tool subjects, as well as in informational subject-matter areas; (2) growth in emancipation and responsibility in personal behavior; (3) increased understanding of group relationships in the family, the school, and the community; (4) increased competency in the skills of social interaction; and (5) ability to use direct-response mechanisms in resolving conflict situations in the adjustment process. In addition, some of their important psycho-biological needs were found to be: (1) economic security; (2) social recognition; (3) belongingness, of acceptance by the group; and (4) a feeling of personal worth as a contributing member of a social group.

The purpose of the experimental educational program was two-fold: to provide school experiences which would help meet the needs of the boys and girls while in school, and to prepare them for competent adjustment in post-school years. To achieve this purpose, the instructional program was directed toward these specific goals: (1) development of desirable personal behavior; (2) improvement in the fundamental academic skills; (3) development of the manipulative arts; (4) improvement of work and study habits; (5) learning of occupational and related vocational information; and (6) pre-employment experience. The curriculum was selected from problems in the

immediate experience of the children which were then expanded to make possible more general application of the skills and information thus learned, and the attitudes so developed. Instructional method was characterized by: (1) group planning; (2) group experiences; (3) in-school reproduction of situational experiences; and (4) the use of the creative and manipulative arts. A variety of educational materials were used, including field trips, radio broadcasts, films and stereopticon slides, as well as books, magazines and newspapers. Construction and art materials were used in correlative handwork and in the crafts.

Each child in the study spent 3 years in the special centers. The evaluation of the adequacy of the program in meeting the needs of the children in the in-school period was made on the basis of their academic achievement in the tool subjects, the level of social maturation which they had attained, and adjustment patterns which they used at the time of special center withdrawal. Data for this evaluation included standardized test results and records of such experiential activities as positions of service or leadership in school activities, part-time employment, assumption of responsibility in the home, and leisure-time interests.

In addition to the in-school period, the evaluation was extended over a five-year post-school period. During this follow-up after leaving the special centers, the academic, vocational, and social competency of the children was measured by their final educational attainments, by their ability to get and keep employment, and by their personal and social adjustment in the home and community. These competencies were determined by the record of their achievement and activities, and by the results of objective measures of personal and social adjustment.

At the close of the in-school period, the group showed an average gain of three years and eight months in composite achievement, during the three-year instructional program; the range of gain was from 2.6 years to 4.7 years. The average gain in reading was 4.1 years, with a range of gain from 2.4 years to 4.7 years. The average rate of gain in composite academic achievement during the in-school period was 120 although the average IQ of the group was 51.7; the average achievement level at special center withdrawal was that of the 2nd month of the 5th grade, although the average grade-expectancy calculated for the group according to their mental age at the close of the in-school period was the 3rd month of 3rd grade. Thus, the achievement of the group as a whole exceeded their expectancy by almost 2 years.

In addition to this gain in the use of the tool subjects, the group showed improved personal adjustment by an increase in range and quality of leisure-time interests, improved personal appearance, and increased responsibility for personal activities. An analysis of the methods used in meeting conflict situations showed a tendency toward more frequent practice of direct response rather than substitute mechanisms. They showed increased freedom from family pressure and dictation, greater ability and willingness to serve in positions of usefulness to others, and growing ability to get and keep part-time employment. Their group behavior showed increasing social maturation and competency in activities similar to those participated in by normal childen of their age. On objective measures, they were shown to have attained a level of personal and social adjustment equal to or better than average persons of their age group.

By the close of the study (at the end of the five-year post-school period) slightly more than 27% had completed a 4 year high school course, and 5.1% had continued post-high school training. 20.1% were still in school attendance, most of them in night school classes, at the close of the study. 83.4% were regularly employed, and of this group almost ⅓ were in skilled occupations, and another ⅓ in clerical positions. 17 persons, or approximately 6½%, were in managerial or supervisory positions in industry, where they had responsibility for other workers. 14 others, an additional 5½%, were in inspection positions, where precision of finished products was their responsibility.

The recorded mean duration for all jobs held in the post-school period was 3 years and 6 months, although the actual duration was in excess of that time, because 83.8% of the group were still employed at the close of the study. By the terminal date of the investigation the salaries of the boys ranged from $13 to $84 per week, with a mean of $28; the girls' ranged from $10 to $60, with a mean of $27 per week. The median salary for the total group was $32.07.

At the close of the study 83.4% were regularly employed; 5.9% were in military service; 3.5% were girls who had married and gave their full time to homemaking; 3.1% were temporarily idle; and 2.4% were in full time school attendance. Only one person could be classified as "permanently idle," having never been employed nor in any voluntary school attendance. Two had died during the course of the study.

15 of the girls, and 3 of the boys, were married by the end of the study. None of the family units so developed were financially dependent, nor were there records of family maladjustment, as evidenced by the lack of contacts of these families with the courts or behavioral clinics. 4 families had 1 child each; 6 had 2 children; and 1 had 3. The ages of the children ranged from 4 months to 4 years. There was only one intermarriage within the group in the study.

According to objective measures, those gains in adjustment which were noted in the in-school period continued in the post-school period. Change continued to be made after special center withdrawal, but gains were not as great later as those made immediately after special center enrollment. Changes occurred in both positive and negative directions, i.e., changes were indicative of both gains and losses, and were made in each area of behavior at each evaluation interval. However, the mean group changes were gains in each area at each interval, and more than 90% of all cases of change for individuals at any evaluation period, were gains. Although in some individual cases a drop in improvement in any area was noticed at one interval over a preceding one, in no case was this drop continuous, and in only 3 cases was the overall change a drop; i.e., gain attained in the in-school period was maintained in the post-school period. Change continued to occur in the post-school period, and in the large majority of cases, continu d in the same direction as the general tendency of change in the in-school period. In intelligence, individual overall change ranged from a drop of 4 IQ points to a gain of 71 points; 3 individuals showed a drop in IQ; 8 showed a gain of less than 10 points; the mean overall change for the entire group at the close of the study was 40.7 IQ points. 80.7% of the group exceeded a gain of 30 IQ points; 59.3% reached or exceeded a gain of 50 points. By the end of the study, 59.7% of the total group were classifiable as low

or high normals; only 7.2% were still feebleminded. In areas of personal and social behavior, 79% equalled or exceeded the ratings of the highest ⅕ of well-adjusted adults. In general, data from the Control group indicated little change in the areas of behavior investigated, although IQ change ranged from a gain of 4 points to a loss of 22 points; the mean IQ change was a drop of 3.6 points. For the equated Experimental group with which this control was compared, the range of change was from a gain of 9 to a gain of 60 points, with a mean change of 25.2 points gain.

By the end of the study, the average adjustment of the total Experimental group was equal to that of the average adult, both according to standardized measures and their academic, vocational and social activities.

Educational interpretations. The change found in the total group under investigation was found to be in the same direction and of similar degree to that of the subgroup which was equated with the control group, taken separately. Thus, the differences found between the Experimental and Control group can be accepted as representative of the differences to be found if the larger group were to be compared with a control of its size. Because the 2 groups were equated on the basis of chronological age, initial intelligence, number of years school experience, initial academic achievement and socio-economic status, any of these 5 factors or their combinations cannot be considered as causal in effecting the found differences in change in behavior. While the school environment was a controlled variable in the study, the presence of such uncontrolled factors as change in sibling relationships, or in relationships of parents to the community or of parent-teacher, parent-child relationships, or any combination of these factors must of necessity have influenced the resultant changes in behavior. In addition, in the consideration of human behavior, the operation of other variables, unknowable and immeasurable, must limit any interpretation of causal relationship in the determination of change in behavior.

On the basis of this study, it can be said that the children who were participants in the experimental school program showed desirable and significant change in personal, social, and intellectual behavior, and that these changes were more desirable and of greater degree than were those found in a comparable group coming from a differing school environment. Further, change in intelligence was found to be closely related to change in personal emotional behavior, and that increase in emotional stability was accompanied by increase in intelligence, as determined by test performance and an evaluation of experiential activities. Conversely, increase in behavioral aberration was accompanied by loss of intelligence, according to these same criteria. Statistically, a high correlation was found between change in areas of personal behavior, and in intelligence.

In this research, no adequate study was made of the children of original cases, because of the fact that most of them were still in the period of infancy at the terminal date. Valuable pertinent data would be desirable concerning their developmental histories, and the personal, social, and intellectual competency of this second generation in their progress to maturity. Further research is also needed in the analysis of the factors contributing to the success of the experimental instructional program, to determine which of such factors (separately or in combination) were the educational

determinates in the development of the personal, social, academic, and vocational competencies which were found to have developed.

The multiplicity of factors interacting in the adjustment process makes difficult any determination of causal relationships in the development of social competency. However, evidence here reported has shown a large proportion of the children in this study to have reached a degree of personal, social and intellectual behavior, and a level of academic and vocational competency, equivalent to that of the average normal adult of years comparable to their age at the close of the investigation, despite the fact that originally these children had been classified as feebleminded. To the extent that the cases in the study were representative, therefore, it can be concluded that a majority of children originally classified as feebleminded can grow to be mentally competent, well-adjusted members of a democratic society, if their educational program is so planned to meet their emotional as well as academic needs while in school and to prepare them for social and vocational competency in their post-school years.

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APPENDIX A

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Allendale School for Boys, Raymond A. Thompson, Director
American Red Cross, Marie Youngberg, Director
Behavior Clinic, Mrs. Miriam Leavitt, Director of Social Service
Big Sisters, Mrs. Charles H. Moody, President
Booth Memorial Hospital, Major Esther Johnson, Superintendent
Catholic Charities, Rev. Vincent J. Cooke, Director
Catholic Dependent Child Commission, Margaret O'Keefe, Case Worker
Chicago Church Federation, Louis DeBoer,

Director
Chicago Home for Friendless, Ruth A. Sayre, Superintendent
Chicago State Hospital, Mrs. Florence Worthington, Chief of Social Services
Chicago Maternity Center, Beatrice E. Tucker, M.D., Medical Director
Chicago Welfare Administration, George J. Klupar, Commissioner, Home Service
Children's Memorial Hospital and Dispensary, Mrs. Babbitt S. Jennings, Director
Children's Scholarship Association, Mrs. Alma C. Livermore, Executive Director
Christopher House, Lena M. Seeman, Head Resident
Circuit and Superior Court Service, Mrs. Margaret Dovar, Supervisor
Cook County Bureau of Public Welfare, Claira Paul Paige, Director
Cook County Hospital, Josephine G. Taylor, Director
County and Probate Court Service, Mrs. Clara Urban, Supervising Case Worker
Court of Domestic Relations, Mary E. Sullivan, Supervisor
Court Service Division, Ruth Coleman, Division Director
Criminal Court Service, Lillian Barquist, Supervisor
Glenwood Manual Training School, William A. May, Acting Superintendent
Illinois Children's Home and Aid Society, Mrs. Margaret Mink, Director
Illinois Public Aid Commission, Raymond M. Hilliard, Executive Secretary
Immigrants' Protective League, Mrs. Kenneth F. Rich, Director
Infant Welfare Society, Sara B. Place, R.N., Superintendent
Institute for Juvenile Research, Paul L. Schroeder, M.D., Superintendent
Jewish Children's Bureau, Mrs. Mary Lawrence, Assistant Executive Director
Jewish Social Service Bureau, Virginia C. Frank, Executive Director
Jewish Vocational Service, W. A. Lurie, Director
Joint Service Bureau, Elsa E. Dahl, Director
Juvenile Court of Cook County, Irene Kawin, Deputy Chief Probation Officer
Juvenile Protective Association, Jessie F. Binford, Executive Director
Legal Aid Bureau, Mrs. Marguerite R. Gariepy, Senior Attorney
Michael Reese Hospital, Leonorow B. Rubinow, Director
Municipal Tuberculosis Sanitarium, Frederick Tice, M.D., President
Northwestern University Settlement, Harriet E. Vittum, Head Resident
Psychopathic Hospital Social Service Department, Mrs. Lera Crohn, Director
School Children's Aid Society, Mrs. George A. McCorkle, President
State's Attorney's Office, Emma Lou Hodgin, Director
Traveler's Aid Society, Mrs. Aneita L. Tidball, Executive Secretary
United Charities of Chicago, Jeannette Hanford, Assistant General Superintendent
University of Chicago Clinics, Ruth Emerson, Director
Visiting Nurses' Association, Mary E. Westphal, R.N., Superintendent

APPENDIX B

INTERVIEW OUTLINE GUIDES AND SUMMARY RECORD FORMS USED IN THE COLLECTING AND RECORDING OF DATA

FACE SHEET
and
Home Environment History

Name _____ Date of birth _____
Address _____ Place of birth _____
_____ Telphone _____
Transferred from _____ School Date of transfer _____
Accompanied by _____ Age at transfer _____

* * *

Family Composition

Mother _____ Father _____
Date of birth _____ Date of birth _____
Place of birth _____ Place of birth _____

Siblings

Name	Sex	Age Dif.	Ed. Lev.	Name	Sex	Age Dif.	Ed. Lev.

Others in home _____ Relationship _____

Economic Status

Wage earners _____ Occupation _____
_____ _____
_____ _____
Supporting income _____
Economic Status: Dep. Low Sub. Sub. Low Av. Good

Health Status

	Pres. Health	Last Illness			Pres. Health	Last Illness	
		Nature	Date			Nature	Date
Mother				Father			
Siblings							

Last hospitalization:
Patient _____ Hospital _____ Cause _____
Attending Physician _____ Date _____
Physical/mental defects: _____
Mother _____ Father _____
Siblings _____
_____
_____

Clinical treatments:
Patient _____ Clinic _____
Cause _____ Active Dates _____ Active/Closed

Social-Cultural Status

Marital: Normal Separate Divorced Deceased
Missing Parent _____ Cause _____
Date of leaving
Delinquency area of neighborhood: Hygienic standards of family:
Sanitary facilities of home: Community status of family
Social Agencies registered:

BGS:CRI

INTERVIEW WITH SUBJECT

Name _____ Date of birth _____

Address _____ Telephone _____

Type of dwelling _____

Apartment _____ House _____ Own Home _____

Language spoken in home _____

What reading matter is present in the home _____

_____

Social status of the home _____

Maximum education level attained by subject _____ Spouse _____

Family composition _____

Others in the home _____

Economic status of the home _____

Who is wage-earner _____ Supporting income _____

General health of subject and spouse _____

Contact with social agencies _____

Duties of subject in the home _____

How well are they performed _____

Of what organizations is he a member _____

In which is he active _____

What are his special hobbies and interests _____

What does he recall of school memories _____

Does he miss school _____

Is he sorry he did not graduate _____

Is he glad to be free to look for work _____

Does he enjoy his job _____

Is he satisfied with his success on his job _____

Why did he quit former positions _____

Does he keep himself busy constructively after working hours _____

Present status of health _____ Last illness _____

Last hospital confinement _____

Cause _____ Attending or family physician _____

Last dental examination _____ Rating _____

Clinical records _____

General development _____ Nutrition _____

Vision _____ Last examination _____

Audition _____ Last examination _____

BGS:CR:F

SCHOOL PROGRESS AND PROBLEM HISTORY

Name _____ Date of leaving _____
Address _____ Schools _____

Elementary School

Grade	Dates	Age	School	PRS	Cause	Grade	Dates	School	PRS	Cause
Kgn						5B				
1B						5A				
1A						6B				
2B						6A				
2A						7B				
3B						7A				
3A						8B				
4B						8A				
4A										

Activities participation _____ Honor Positions _____ Employment _____
Date of graduation or withdrawal: _____
Kind of certificate earned: None L.V.C. L.M.

High School Progress History

Year	Dates	Age	School	Year	Dates	Age	School
9B				11B			
9A				11A			
10B				12B			
10A				12A			

Special activities _____ Honor positions _____ Employment _____

Other Educational History

Dates	Institution	Subjects	Dates	Institution	Subjects

School Test Records
(Prior to Special Placement)
Intelligence Tests

Date	Name of Test	Form	CA	MA	IQ	Examiner	Remarks

Achievement Tests

Date	Name of Test	ARSC	Gr. Level	Date	Name of Test	ARSC	Gr. Level

Special handicaps:
Special abilities:
Present school placement:
Present school adjustment:

Remedial instructional provision:
Opportunities to develop talents:

BGS:CRII

PERSONAL INTERVIEW AT SCHOOL VISIT

Name _____ School _____
Address _____ Grade when left _____

Schools attended prior to this school:

Name	*Length of time*	*Grades*

Age at beginning school _____
Did he attend kindergarten _____ How long _____
Retardations _____ Causes _____
Accelerations _____ Causes _____
Problem history in school: Behavior: _____

Academic: _____
Previous recommendations for remedial work _____
_____ Where given _____
By whom _____ Subjects _____
What results _____
Outstanding deficiences in class-room work _____

Motor skill _____ Muscular co-ordination _____
Attendance problems: _____ Absences _____
Excused by note from parents _____
General nature of causes of absences _____

Tardinesses _____ How excused _____
General nature of causes _____
Special examinations by Bureau of Child Study or Behavior Clinics _____
_____ Dates _____
Summary of diagnosis _____

School Factors Influencing Child Development

Cleanliness of class-rooms _____
Attractiveness of class-room _____
Personal relationships of teachers with each other and with teachers _____

Class-room discipline _____
Curriculum emphasis _____
Interest of principal in pupils _____

General teaching method _____
Pupil participation in school activities _____

Pupil participation in special room or class activities _____

General school policy regarding pupil withdrawals _____

BGS:CR:B

EMPLOYMENT HISTORY

Name _____
Address _____
First employment: In-School _____ Post-School _____
Date _____ Age _____ Part-Time _____ Full Time _____

Initial Methods of Job-Seeking

Hawking	X/O	Want-Ads	X/O	Employment Agencies	X/O

Subsequent methods: _____
Interviews: with employment agency counsellors _____
with prospective employers _____

Employment History

Employer	Dates	Position	Wages	Cause of Leaving

Employers' Ratings of Social Behavior

Employer	(1)	(2)	Employer	(1)	(2)

Employers' Ratings of Efficiency

Employer	Efficiency	Employer	Efficiency

Vocational Training on-the-Job

Employer	Skill	Time	Result	Employer	Skill	Time	Result

Subjects' Ratings of (1) Employer and (2) Other Workers

Employer	(1)	(2)	Employer	(1)	(2)

Present Employment Status

Employed _____ Unemployed _____
How long with present employer _____ How long unemployed _____
In training _____
Idle _____

Present self-sufficiency status: Dependence Part. Dep. Ind.

BGS:CR:III

INTERVIEW WITH FORMER EMPLOYERS

Name of Firm _____ Name of subject _____

Address of Firm _____ Tel. _____

Dates of employment _____ Position _____ Salary _____

Cause of leaving _____

Quality of work _____ Quality of adjustment _____

Would you re-hire? _____

* * *

Would you consider him:

Value	Trait	X	Score	Trait	X	Score
1	Skillful			Inefficient		
2	Industrious			Lazy		
1	Prompt			Irregular		
2	Dependable			Unreliable		
1	Alort			Slow		
2	Willing to take criticism			Antagonistic to criticism		
1	Anxious to improve			Self-satisfied		
	Total score			Total score		
	Efficiency rating			Percent rating		

In his relations with his superiors, would you consider him:

Value	Trait	X	Score	Trait	X	Score
2	Co-operative			Antagonistic		
1	Friendly			Unfriendly		
2	Cheerful			Sullen		
1	Courteous			Rude		
1	Generous			Selfish		
2	Thoughtful			Inconsiderate		
1	Kind			Unkind		
	Total score			Total score		
	Efficiency rating			Percent score		

In his relations with his fellow-workers?

Value	Trait	X	Score	Trait	X	Score
2	Co-operative			Antagonistic		
1	Friendly			Unfriendly		
2	Cheerful			Sullen		
1	Courteous			Rude		
1	Generous			Selfish		
2	Thoughtful			Inconsiderate		
1	Kind			Unkind		
	Total score			Total score		
	Efficiency rating			Percent rating		

BGS:CR:C

TEST RECORD

Name _____ Date of birth _____
Address _____ Schools _____
Date at entrance _____ Grade at entrance _____
Age at beginning of study _____ Age at end of study _____

* * *

Mental Ability Tests

Date	Name of Test	Form	CA	MA	IQ	Examiner	Remarks

Emotional Maturity Tests

Date	Name of Test	Form	Raw Score	%ile	Interpretation	Remarks

Personality Inventories

Date	Name of Test	Form	Raw Scores	%ile	Interpretations

Social Maturity Scales

Date	Name of Test	Form	Score	SA	Interpretation	Remarks

Adjustment Inventories

Date	Name of Test	Form	Raw Score	Interpretation	Remarks

Achievement Tests

Date	Name of Test	Form	Gr. Level	Interpretation	Remarks

BGS:CR:V

PERSONAL AND SOCIAL HISTORY

Name _____
Address _____ Tel. _____
Marital status: S M Sep. Div. Wid. UM
Social agencies _____

* * *

(a) M., Sep., Div., Wid., UM

Date of marriage _____ Age at marriage _____ Where _____ Court Church
Name of spouse _____ Age at marriage _____
Ed. level of spouse _____ Occupation _____
Courtship period _____ Parental consent _____

Children	Date of Birth	Sex	Remarks	Children	Date of Birth	Sex	Remarks

	Occupation	Employed	Dates	Salary
Husband				
Wife				

Self-sufficiency status: Full Dep. Partial Dep. Independent

Status of Home:	Very Low	Low	Average	High	Very High
Economic					
Hygienic					
Cultural					
Social					

Membership in organizations:

	Civic	Religious	Fraternal	Recreational
Husband				
Wife				
Joint				

Major leisure interests _____
Interests shared with spouse _____
Subjects' estimate of family relationship _____
Spouse's estimate _____
Date of divorce, separtion, or death _____

(b) Single

Employed _____ Not employed _____
Engaged _____ Keeping Company _____ Neither _____
Frequency of dates: Often _____ Sometimes _____ Never _____
Membership in organizations: Civic Religious Fraternal Recreational
Major leisure interests: Individual _____ Group _____
Companions: Sex: M _____ F _____ Both _____ Age: Older _____ Younger _____ Same _____
Living arrangements: Alone _____ Parents _____ Other Relatives _____ Others _____
Contributions to home: Economic _____ Other _____
Level of home: Economic _____ Hygienic _____ Social _____ Cultural _____
Plans for future _____
General social adjustment _____

BGS:CR:IV

SUMMARIES OF CASES READ FROM SOCIAL AGENCIES

Name _____ Agency _____
Address _____
Address _____ Case Name _____
Case No. _____

Date of report _____
Nature of problem _____
Relation of this subject to problem _____
Treatment _____
Results _____
Present status: active/closed
Date of closing _____
Name of worker _____

* * *

Clinical Records

Reason for referral _____
Types of examinations or observations _____
Summary of diagnosis _____
_____
Prognosis _____
_____
Treatment recommended _____
_____
Report on follow-up of treatment _____
_____
_____
Final results of treatment _____
_____
_____
Date of dismissal _____

* * *

Court Records

Name of court _____ Date _____
Nature of the case _____
_____
Relation of this subject to case _____
_____
Age of this subject at hearing _____
Classification of case _____ Disposition _____
Date closed _____ Re-opened? _____
Final disposition _____

Institutional Placements

Name of institution _____
Date of commitment _____ By whom _____
Age when made _____ Length of placement _____
Adjustment in institution _____
Date released _____ By whom _____
Further recommendations _____
_____
_____
Present placement _____
Present adjustment _____

BGS:CR:D

INTERVIEW WITH COMMUNITY LEADERS

Name _____ Organization _____

Address _____ Person interviewed _____

How long has he been a member? _____

Does he participate actively? _____

Does he hold office, or has he in the past? _____

Does he mix well with other members? _____

In what ways does he show qualities of leadership in the organization? _____

_____

_____

In your experiences with him, has he shown himself to be:

Honest	or	Dishonest
Dependable	or	Unreliable
Aggressive	or	Passive
Interested	or	Apathetic
Careful	or	Careless

Does he respect the rules of the group and abide by them until changed, if desirable? _____

_____

Does he contribute to the progress of the organization by his membership? _____

Special memoranda:

BGS:CR:E

Directions for Completing Case Record Summaries from Social Service Agencies

I. Format of case records
   - A. Face sheet
   - B. Correspondence
   - C. Reports from other agencies and clinics
   - D. Running case record summary

II. Nature of data secured from agencies
   - A. Financial
   - B. Clinical
   - C. Social (other than court records)
   - D. Court records and disposition

III. Summary schedule
   - A. Date of report refers to date summary is completed
   - B. Nature of problem means "why was the agency interested in the case?"
   - C. Relation of subject to problem means did the problem pertain primarily to the child in this study, to his siblings, or to his parents
   - D. "Treatment" means what was done by agency
   - E. "Results" refers to what happened as a result of treatment
   - F. Clinical records includes medical, psychiatric and psychological clinical records
   - G. Court records includes all referrals to a court for any reason
   - H. "Nature of case" refers to classification of case in court: felony, misdemeanor, dependency, or delinquency

IV. Narrative summary of case including significant details not included on schedule

Appendix C

Some Representative Pupil Activities Completed During the Experimental Educational Program

AMERICANISM AND DEMOCRACY

Study work-sheets prepared by and for the pupils of the special centers while studying "America's Our Country"

AMERICA'S OUR COUNTRY

Study Sheet—Part I

I. Introduction to the meaning of Americanism

A. The meaning of the democratic form of government.
B. The difference between ways of living in a democracy and ways of living under monarchies and dictatorships.
C. The meaning of any flag of any country, in general, and of the American flag in particular.
D. The privilege and responsibilities of American citizenship.

II. Study Activities

1. Look up the meanings of the following words in the dictionary so you will understand them in your work. Write a dash after the new word, and then write the definition after the dash, like this: *just—fair*. Do the rest of the words like this one.

1. democracy	8. pledge	15. standard
2. monarchy	9. allegiance	16. duty
3. dictator	10. republic	17. equality
4. symbol	11. privilege	18. justice
5. emblem	12. responsibility	19. humanity
6. ensign	13. citizenship	20. indivisible
7. representation	14. government	21. liberty

2. What privileges or benefits do you receive from living in a democracy which you would not have under a monarchy or a dictatorship?
3. Read the following statements. Some of them tell ways of living in a dictatorship. Some tell ways of living in a democracy. Make two columns on your paper and put a mark in the column headed democracy if the statement belongs there. Put a check in the column headed dictatorship if the statement belongs there.

Statement	*Democracy*	*Dictatorship*
1. Government control of newspapers, radio, and moving picture films.		
2. Right of trial by jury.		
3. Freedom to go to any church.		
4. Laws made by the rulers and their appointed assistants.		
5. Rulers elected by the people.		
6. Freedom to train for a chosen job.		
7. Freedom of discussion.		
8. Government control of training and education of children.		

4. What is the purpose of the flag of any country? For what does it stand? What does the American flag mean to you?

5. Tell the story of the making of the first American flag.
6. What are some of the privileges we receive as American citizens? What are some of the duties of citizenship? Always remember the words duty and privilege go together. We cannot expect any privilege unless we are faithful to the duty that belongs with it.
7. Explain why it is necessary for the good American citizen to do each of the following.
   (a) Read and study new laws that are suggested by legislators.
   (b) Discuss problems of government, campaigns, and laws with his friends and neighbors in the community.
   (c) Vote on all election days.
   (d) Pay taxes needed by the government.
   (e) Obey all the laws of the country until they are repealed or amended.

References:

1. Brindl, Helen M., *Your Land and Mine,* Macmillan Co., 1940, "The American Flag," pp. 81-87
2. Bush, Maybell, *Enjoying Our Land,* Macmillan Co., 1940, "The Father of Waters," pp. 97-107
3. King, Allen Y. and Ida Dennis, *The Way of Democracy,* Macmillan Co., 1940
   "What Happened at Philadelphia," pp. 20-29
   "America for Me," p. 365
   "The American's Creed," p. 382
   "My Creed," p. 382

THE PLEDGE OF ALLEGIANCE TO THE AMERICAN FLAG

I pledge allegiance to the Flag of the United States of America, and to the Republic for which it stands: one nation, indivisible, with Liberty and Justice for all.

1. Find stories about the American Flag that you like very much and make a list of them. Write the name of the story, the name of the author, the name of the book, and the pages of the story. After each story tell why you liked it. Your paper will look something like this:

STORY TITLE	AUTHOR	TITLE OF BOOK	PAGE	WHY I LIKED IT

2. Think of several words that you think describe the American flag and what it means to you. Write a short composition about this subject. Choose an interesting title for it.

THE AMERICAN'S CREED

I believe in the United States of America, as a *government* of the people, by the people, for the people; whose *just powers* are *derived* from the *consent* of the *governed;* a *democracy* in a *Republic;* a *sovereign Nation* of many sovereign *states;* a *perfect Union,* one and *inseparable, established* upon those *principles* of *freedom, equality, justice* and *humanity,* for which American *patriots sacrificed* their lives and *fortunes.*

I, therefore, believe it is my duty to my country to love it, to *uphold* its *Constitution;* to *obey* its laws; to *respect* its flag, and to *defend* it against all *enemies.*

—William Tyler Page

1. Find the definitions of the following words:

1. just	7. nation	13. defend	19. principles
2. powers	8. duty	14. state	20. patriots
3. derived	9. uphold	15. union	21. sacrificed
4. consent	10. Constitution	16. perfect	22. fortunes
5. governed	11. obey	17. inseparable	23. enemies
6. sovereign	12. respect	18. established	

2. Write the "American's Creed", using the small words that mean the same for the difficult words that are *underlined*.

AMERICA'S OUR COUNTRY

Study Sheet—Part II

I. Foundations of American democracy

A. Co-operation of the individual with the group.
   1. In the home and school.
   2. In play and club groups.
   3. In other social contacts.

B. Tolerance of the rights of others.
   1. Respect for private property.
   2. Racial and national tolerance.
   3. Tolerance of other points of view.
      a. In work
      b. In play
      c. In religion
      d. In politics
      e. In family contacts

C. Respect for authority.
   1. Understanding of positions of authority as bestowed by the will of the majority.
   2. The place of universal education in a democracy as training for leadership and intelligent individual participation in representative government.
   3. Responsibility for individual active participation either as leaders or constituents.

D. Alertness to progressive change.
   1. Free schools for the development of keen minds, attentive to current problems.
   2. The need to keep informed by use of available free means of communication—newspapers, radios, newsreels, public lectures.
   3. The understanding of the basic rights of freedom of assembly and freedom of speech.

E. Desire for universal justice.
   1. Individual honesty and fairness.
   2. The natural right of trial by jury.
   3. The right of petition and free speech.
   4. The fundamental principle of compliance with regulations toward the end of law and order.
   5. The need for social and economic security for all.
   6. The role of kindness, sympathy, and assistance in the interest of securing justice.

II. Study Activities

1. Look up the following words in the dictionary. This will help you to understand the material you read much more clearly.

1. co-operation	18. universal	35. means
2. individual	19. will	36. lectures
3. group	20. intelligent	37. honesty
4. social	21. participation	38. right of petition
5. contacts	22. constituent	39. regulation
6. tolerance	23. alertness	40. security
7. rights	24. current	41. assistance
8. private	25. available	42. change
9. property	26. public	43. attentive
10. racial	27. freedom of assembly	44. informed
11. national	28. trial by jury	45. communication
12. points of view	29. compliance	46. basic
13. religion	30. economic	47. natural right
14. politics	31. sympathy	48. fundamental
15. authority	32. progressive	49. law and order
16. positions	33. keen	50. role
17. bestowed	34. problems	51. securing

2. How does co-operation help a person to be more successful in school? Tell some ways children can co-operate with their parents to make their family happy and contented. Do you belong to a club? Tell some of the ways in which you have helped your club.
3. How do adults co-operate in a democracy? Explain ways in which they help their country by working together.
4. Why do people work to gain goods or, as we say, property? Can you think of any ways that private property is protected in a democracy?
5. Why is it necessary to respect the ownership of private property? Explain your answer.
6. What is the difference between private ownership and government ownership? Which do you think is better? Why? Do you think it is better that some goods should be private and some government? If so, list some examples of each.
7. Can you think of some reasons why we should be friendly with people of all countries?
8. Some people dislike certain nationalities or certain races because they knew a few people of that nationality or that race whom they didn't like. Is that intelligent thinking? Explain your answer.
9. Examine the map from the Council Against Intolerance. It is called AMERICA–ONE NATION FROM MANY COUNTRIES. Notice how many different religions and countries are represented in these "makers of America". Does this map suggest any arguments for racial, national, and religious tolerance?
10. What do you mean by religious tolerance? How does the right of freedom of worship in a democracy grow out of religious tolerance? What would happen if we did not have this right?
11. In the American democratic system of government there are two major political parties and several minor parties. Look up some of the clippings from the recent election and see how many different points of view were taken by these parties on important problems. How does political tolerance help democracy? What is the individual's responsibility as a citizen in these political questions?
12. From where does the president get his authority as a ruler? How is this different from the authority of a monarch or a dictator?

13. How does the system of free schools in America contribute to our democracy? How does this education prepare citizens to fulfill their responsibilities?
14. How can we in the United States keep informed on public and national problems? What are some of the agencies that help us understand these problems?
15. What is freedom of speech? freedom of assembly? freedom of the press? How do these rights help us to preserve and improve our democracy?
16. Explain what is meant by trial by jury. How is this different from other ways of trying cases? Why is this right valuable?
17. How does the right of petition help to secure justice?
18. What is the purpose of all law?

References:

1. Brindl, Helen M., *Your Land and Mine,* Macmillan Co., 1940
2. Bush, Maybell, *Enjoying Our Land,* Macmillian Co., 1940
3. Elson, William H., *Elson-Gray Basic Readers, Book One, Primer,* Scott, Foresman, and Company, 1936
4. Elson, William H., and Wm. S. Gray, *Child Library Readers, Primer,* Scott, Foresman and Co., 1936
5. Haviland, Mary C., *Good Neighbors,* J. B. Lippincott, 1930
6. King, Allen Y. and Ida Dennis, *The Way of Democracy,* Macmillan Co., 1940
7. Nemec, Lois G., *School Friends, Let's Take Turns,* Macmillan Co., 1940
8. O'Donnell, Mabel and Alice Carey, *Day in and Day Out,* Row, Peterson Co., 1936
9. Sindelar, Joseph C., *Nixie Bunny in Manners-Land,* Beckly-Cardy Co.
10. Scantlebury, Elizabeth E., *Little World-Children,* Ginn and Co., 1931
11. Storm, Grace E., *Neighbors and Helpers,* Lyons and Carnahan, 1936.

THE GOOD AMERICAN'S CITIZENSHIP CODE

Many men and women have helped build our nation from the days of the early colonists until today. They were people whom we honor and respect because of their fine characters. They were kind and thoughtful. They were unselfish. They worked very, very hard, even when they were not sure they would succeed. Whether they were well-known citizens whom we remember as leaders in our country's story, or people who lived quietly in the country and in the cities, they were all a part of the making of America. The men and women of today, the mothers and fathers, the uncles and aunts, the older brothers and sisters, are all doing their part to help our country. Before long, you, the children who are now in school, will be grown up. You will also be an important part of this nation. Our country will depend on you for its laws, for its improvements, for the production of its food, and clothing, and homes, for all the things which make its citizens happy, peaceful, and comfortable.

To build strong, noble characters like those which have helped our nation from the days of Columbus and Washington until now, it is necessary to start very early to build habits that will make good citizens. Here is the CODE OF THE GOOD AMERICAN.

1. I will be kind in all my speech.
2. I will bear no spites nor grudges.
3. I will not selfishly insist on having my own way.
4. I will tell the truth at all times, for a lie is dishonest and may hurt someone else.
5. I will develop independence and wisdom to think for myself, to choose wisely, and to act for myself.
6. I will not be afraid of doing right when the crowd does wrong.
7. I will do my part, and encourage others to do their part, promptly, bravely, and honestly.
8. In all my work with others I will be cheerful.
9. I will not do wrong in the hope of not being found out.
10. I will do promptly what I have promised to do, but I will never promise to do what is wrong.

11. I will follow the rules of personal hygiene to keep me strong and healthy in mind and body.
12. I will form the habits of industry and alertness, for those habits will help to make me a good American.

AMERICA'S OUR COUNTRY

Study Sheets—Part III

I. How American Democracy Came to Be

A. Early colonial life

1. Town meetings in New England
2. Colonial governor rule in royal colonies
3. Early attempts at colonial union

B. The Revolutionary War

1. Social progress and changes which emphasized the breach between England and the colonies
2. The Declaration of Independence
3. The economic, industrial, and social changes in the colonies during the progress of the war

C. The Constitution of the United States

1. Purpose of the union
2. Basic democratic principles incorporated in the Constitution
3. The struggle of states and central government and its lesson in compromise

D. American Democracy in Action

1. Elections and campaigns
2. Social legislation and its practical application
3. Public school systems and their function
4. Taxes—their purpose, collection, and distribution
5. Religious and racial tolerance
6. Court systems towards the goal of universal justice
7. Town halls, political forums, and public meetings to put into practice freedom of speech, freedom of the press, freedom of assembly—"the right to keep informed"

II. Study Activities

1. Look up the meanings of the following words:

1. colonial	12. independence	23. forums
2. town meeting	13. economic	24. election
3. governor	14. industrial	25. compromise
4. attempts	15. purpose	26. campaign
5. Revolution	16. incorporated	27. legislation
6. progress	17. central	28. practical
7. basic	18. application	29. public
8. struggle	19. system	30. function
9. emphasize	20. taxes	31. distribution
10. breach	21. court	32. goal
11. declaration	22. universal	33. political

2. What is a town meeting? Do you ever listen to the AMERICAN TOWN MEETING OF THE AIR? Tell what it is like.
3. What is the purpose of the town meeting? Why did it develop in the New England colonies more easily than in the other colonies?

4. Who was the colonial governor? Who was the royal governor? How was the royal governor rule of the colonies different from the rule of our states by their governors today?
5. Why did the colonists so often try to unite, even before they thought of open rebellion against the mother country? Describe these early attempts at union, and explain why they were not successful.
6. What were some of the changes in ways of living in England and in the colonies which helped to bring about the Revolutionary War? How did the different habits and customs in different colonies affect the feeling even of the colonists for each other?
7. Can you think of some reasons why some colonists did not want war with the mother country while others did?
8. What is the DECLARATION OF INDEPENDENCE? Why was it written? Why is it still honored as a great contribution to democracy?
9. In what way did the Revolutionary War help the united colonies to develop and become more important as a new nation? What were some of the changes in ways of living, and in industry, which came about as a result of the war?
10. How was the Constitution of the United States developed? What was the Constitutional Convention? Why did the colonists finally decide it was necessary for them to form some kind of union?
11. The first ten amendments to the Constitution of the United States are very important. They are called the "Bill of Rights". What is an amendment? How can amendments be added to our Constitution? Why are amendments sometimes necessary?
12. What was the Constitutional Compromise? Explain its importance in our government today.
13. What would happen if we had no way to amend the Constitution? What would happen if it could be amended too easily?
14. Read the Bill of Rights carefully. What important democratic principles does it include? Can you think of any of these rights which have at any time been taken away from us? How can we help to keep them safe?
15. How do American citizens practice democracy and their constitutional rights at elections and in campaigns?
16. How do such laws as the Wagner Act, the wage-hour bills, legislation for relief, the W.P.A., and the federal housing projects help to improve American living conditions?
17. Why do we have free public schools? Why is such a system necessary in a democratic government? How are public schools paid for?
18. Why must people pay taxes? What is tax money used for? Name some of the services a community supports by taxes.
19. In what ways do religious and racial tolerance contribute to the practice of American democracy?
20. What are the values of our courts in protecting the rights of citizens? Can you think of any ways in which they could be improved?
21. Explain how town meetings, public meetings and forums, radio round table discussions, and such exchanges of opinion are ways of using intelligently our rights of assembly, free speech, and petition.

References: The same books suggested in Part II are excellent for this section also. See p. 139.

AMERICA'S OUR COUNTRY

Study Sheets—Part IV

I. National holidays and festivals and their significance in American tradition

A. Festivals of seasons

1. Fall
   a. Hallowe'en
   b. Thanksgiving
2. Winter
   a. Christmas
   b. New Year's
   c. Valentine's Day
3. Spring
   a. St. Patrick's Day
   b. Easter
   c. April Fool's Day
   d. May festivals
   e. Arbor Day

B. Patriotic holidays

a. Lafayette Day
b. Columbus Day
c. Armistice Day
d. Lincoln's Birthday
e. Washington's Birthday
f. Memorial Day
g. Independence Day

C. Holidays which have their origin in the "American Way of Life"

a. Labor Day
b. Election Day
c. American Legion Day
d. Edison's Birthday
e. Clean-Up Week
f. May Day
g. Mother's Day
h. Father's Day

II. Study Activities:

1. What holidays do you like the best? Why? Choose your favorite holiday, and tell what you like best to do on that day.
2. Some days are called "national holidays". Why are they called by that name? Make a list of all the national holidays you can.
3. How should the flag be used for national holidays? How should it be used when decorating halls and stages for special holiday programs?
4. By what other names are Memorial Day and Independence Day sometimes called?
5. What does "armistice" mean? Explain what Armistice Day celebrates.
6. Tell what date these holidays are celebrated:

a. Hallowe'en
b. Christmas
c. New Year's
d. Valentine's Day
e. St. Patrick's
f. April Fool's
g. Flag Day
h. May Day
i. Lafayette
j. Columbus
k. Armistice
l. Labor Day
m. Lincoln's Birthday
n. Washington's Birthday
o. Memorial Day
p. Independence Day
q. May Day
r. Mother's Day
s. Father's Day
t. Election Day
u. Clean-Up Week

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AMERICA'S OUR COUNTRY

Study Sheets—Part V

I. Geographic and Industrial Factors Which Contribute to America's Wealth and Beauty

A. The great central plains
B. Major industrial centers of the north
C. Typical southern cities
D. Fishing centers of New England
E. Major river systems and their industrial importance
F. City planning and city zoning ordinances
G. Natural resources—oil, gas, minerals, etc.
H. Population centers
I. Urban and rural ways of living

II. Study Activities

1. Look up the following words in the dictionary so you will understand them more clearly in your reading.

1. geographic	6. major	11. ordinance
2. industrial	7. rural	12. natural resources
3. factor	8. influence	13. population
4. contribute	9. typical	14. urban
5. plain	10. zoning	15. economic

2. What part of the United States is included in the region we call the "great central plains"? Why is this part of the country called by that name?
3. What are the most important industries of the plains? How does the geography of a region influence its industries?
4. Of what value are the products of these plains to the rest of the country? Do you use any of them? Make a list of foods you eat which come from the great central plains.
5. How do transportation, refrigeration, and advertising affect the agricultural sections of our country?
6. How are prices decided for farm products sold in other parts of the country? Who controls or regulates "price-fixing"? What part, if any, does the federal government play in helping the farmer to sell his goods?
7. What happens to the price of goods when there is more produced than can be sold? What is a surplus? What is meant by purchasing power? How does purchasing power affect the amount the farmer receives for his products?

8. Explain the Federal Surplus Commodities plan. How does it benefit the farmer? The consumer? What disadvantages can you see to this plan.
9. What are some of the dangers of government "price-fixing"? What are some of its advantages?
10. What are some of the differences between an industrial and an agricultural region?
11. In the north there are many industrial centers. What is the main industry for which each of the following is noted: Chicago, Boston, Pittsburgh, and Minneapolis.
12. How do power, communication, and labor affect industrial regions?
13. What is power? Name as many kinds of power as you can and tell how each is generated.
14. When power is generated artificially should it be controlled privately or publicly? Give reasons for your answer.
15. What government power plants are already in operation in the United States? Look up newspaper clippings under "Power" in the clipping file and find out about their management.
16. What effect do factories and industrial regulations of labor have upon housing, home and community sanitation and hygiene, and recreation?
17. What is meant by capital?
18. In what ways does labor protect its interests in industry? What are unions? What is meant by "closed shop", "sit-down-strike", "wages-hour regulations", "minimum wage"?
19. During recent years the Federal Government has enacted several pieces of labor legislation. Among these are the NRA, the Wagner Bill, the creation of the National Labor Relations Board, commonly called the NLRB. Explain the purpose of each of these, and its effect on employees and employers.
20. What are the important industries of the south? In what ways does the agriculture of this region differ from that of the central plains? Explain the effect of this southern agriculture in developing the plantation system of the Old South.
21. How do rivers aid in both agriculture and industry? Name some of the large river systems and tell how they serve their regions.
22. In what ways does city zoning help to provide more attractive and more healthful cities?
23. In what parts of the country are the largest cities, or the biggest population centers found? How can this be explained?
24. How are rural and urban living conditions affected by the industries of each section?

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